

EXHIBIT 30

**Expert Report of Bridget Terry Long, Ph.D., dated January 12,
2018**

**IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA
CASE NO. 1:14-CV-954**

STUDENTS FOR FAIR ADMISSIONS,
INC.,)
Plaintiff,
)
v.)
THE UNIVERSITY OF NORTH
CAROLINA AT CHAPEL HILL, et al.,)
Defendants.)

**Expert Report of
Bridget Terry Long, Ph.D.
Saris Professor of Education and Economics
Harvard Graduate School of Education**

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I. Scope of Assignment and Statement of Qualifications

1. My name is Bridget Long. I am the Saris Professor of Education and Economics at the Harvard Graduate School of Education and the former Academic Dean. I have been a member of the faculty at Harvard University since 2000.

2. I have been retained in this matter by Defendants the University of North Carolina at Chapel Hill and their outside counsel. It is my understanding that UNC-Chapel Hill currently engages in a holistic approach to undergraduate admissions, which is the admissions practice of considering a wide variety of factors in assessing a student's abilities and strengths to identify the most qualified students. An applicant's race and ethnicity may be considered as part of that holistic evaluation. I understand that, under the Supreme Court's precedent, a university that seeks to use a race-conscious admissions program must prove that available and workable race-neutral alternatives do not suffice in achieving the university's broader educational goals, which may include a diverse student body.

3. In this report, I discuss various race-neutral admissions policies that have been implemented by universities in the United States or hypothesized as possible race-neutral alternatives in academic and secondary source literature. The key question is whether a race-neutral approach can be used in a way to accomplish the goals of a university's overall mission achieved through a race-conscious approach—namely, to achieve diversity while also maintaining high standards of academic excellence in the incoming student body.

4. Consequently, in considering the race-neutral alternatives that have been implemented by other public universities, hypothesized in academic literature, and even expressly mentioned in the Plaintiff's Complaint, I opine as to whether these potential alternatives are appropriate to be considered by UNC-Chapel Hill, which has the specific context of being a flagship, highly-selective, public institution in the state of North Carolina, as a potentially available and workable race-neutral alternative. Ultimately, I opine whether UNC-Chapel Hill should give further consideration to any of these race-neutral alternatives. However, I do not attempt to analyze what the ultimate impact would be of any of these race-neutral alternatives at UNC-Chapel Hill or whether UNC-Chapel Hill should implement any of them. Similarly, I do not consider and offer no opinion with respect to the feasibility of the implementation of any race-neutral alternative at UNC-Chapel Hill.

5. While I am aware generally that UNC-Chapel Hill itself has considered race neutral alternatives, I was not asked to evaluate and offer no opinion on the University's consideration of race-neutral alternatives prior to or since this litigation began.

6. In reaching my opinions, I draw upon my research done in connection with this matter as well as my own professional expertise and experience in the field.

7. I am qualified to offer these opinions because of my academic training, professional expertise, and experience in the field. I received my Ph.D. and M.A. degrees in Economics from Harvard University in 2000 and 1997, respectively. I received my A.B. degree in Economics from Princeton University in 1995. A detailed record of my professional

qualifications and scholarly achievements is set forth in my curriculum vitae, including a list of publications, awards, research grants, teaching, and professional activities, attached as Exhibit A.

8. I am a Research Associate of the National Bureau of Economic Research (NBER) and member of the Board of Directors for MDRC, a nonprofit, social policy, research organization. I have also been a presidential appointee and served as Chair of the National Board for Education Sciences, the advisory panel of the Institute of Education Sciences (IES) at the U.S. Department of Education. I have also been a Visiting Fellow at the Federal Reserve Bank of Boston and recipient of the National Academy of Education/Spencer Postdoctoral Fellowship.

9. My research focuses on education with an emphasis on the transition from high school to higher education and beyond. In my work, I examine factors that influence college student access, choice, and postsecondary success, and I evaluate the effectiveness of policies and programs in supporting students and their families. For example, I have developed a series of interventions designed to help students save for college, complete financial aid forms, and enroll and persist at an institution, and I am working with school districts and education agencies to examine the impact of these programs. Additional projects investigate how government policies and institutional programs, such as financial aid and postsecondary remediation, impact college access, persistence, and major choice. I have also investigated the role of college instructor quality, class size, and academic support programs on higher education outcomes. Together, after nearly 20 years of conducting research, these many studies have given me extensive knowledge of how government and institutional policy and programs can influence student opportunities and outcomes.

10. Beyond my research, I have spent 16 years teaching students at the Harvard Graduate School of Education. The bulk of my students come to Harvard after working as higher education professionals for several years, and many of them have experience working in admissions offices or with college access organizations. My courses focus on the Economics of Higher Education, which includes many topics related to admissions and government policy, including the tools of admissions (e.g., test scores, grades, letters of recommendation), debates about admissions preferences (e.g., race-conscious, legacy, athletic), and how policy and legal developments have changed professional practice. I have also taught extensively in our professional education programs, which cater to working professionals who tend to be in senior leadership positions at colleges and universities. In my preparations to teach, I constantly review the latest research and policy developments related to higher education, including admissions, issues. Moreover, through teaching, I am able to engage with students and practitioners to solicit perspectives on what is being experienced in the field.

11. I have also served on many admissions committees, including being the chair of doctoral admissions for the Ed.D. Program for three years and being a committee member for the Master's Program in Higher Education for many years. In my administrative role as Academic Dean, I also worked with members of the admissions staff to review our admissions processes and helped to design an orientation session for faculty who serve on admissions committees. Through these activities, I have gained extensive experience reviewing applications, engaging in discussions of candidate attributes, and reflecting on how to design comprehensive but feasible admissions processes.

12. I have testified multiple times before Congressional Committees on education issues, including ensuring access to higher education for low-income students and tax credits for college expenses. I have also received numerous research grants, including major awards from the U.S. Department of Education, the National Science Foundation (NSF), and the Bill & Melinda Gates Foundation. I have served as an advisor to many organizations, including the College Board, Bill & Melinda Gates Foundation, American Council on Education, Massachusetts Board of Higher Education, Ohio Board of Regents, and the I Have a Dream Foundation.

13. I have not testified as an expert witness in the preceding four years. I am being compensated at a rate of \$440 per hour for my work in connection with this case.

II. Summary of Opinions

14. In this report, I consider race-neutral alternatives and approaches that have been implemented by other universities or considered by researchers. For each category of race-neutral alternatives, I start by summarizing and explaining the rationale for the approach, and then I discuss the research or evidence regarding the actual impact the approach has had at other institutions or is predicted to have based on data simulations. In reviewing this work, I reflect on the quality of the evidence based on my assessment of the data and analysis, and I consider both the short- and long-term consequences of a change in admissions policy. Additionally, I consider contextual and other factors that influence the effects of a policy and the feasibility of implementing a specific approach based on the types of data that would be necessary. Finally, for each approach, I opine as to whether, as part of this litigation, UNC-Chapel Hill should further analyze the strategy as a possible workable race-neutral alternative and what factors or considerations could affect the evaluation of the approach. I do not, however, evaluate or assess the potential impact of a particular race-neutral approach by UNC-Chapel Hill, as I understand that is being addressed by another expert. I also offer no opinion with respect to the efforts that UNC-Chapel Hill has made prior to or since this litigation began to analyze available race-alternatives. A list of the materials that I relied upon is attached as Exhibit B.

15. There are a range of race-neutral approaches that have been implemented or considered, and they have varied in how they have affected (or are predicted to affect) the composition of applicants that would be accepted by an institution. Changes to an admissions policy, which I and other researchers sometimes refer to as admissions or policy “reforms,” can also have indirect effects on who decides to apply, an important determinant of the composition of the pool of accepted applicants.

16. In my opinion, the evidence makes clear that the specific context in which a change in admissions policy is implemented is critical: the outcomes observed and estimated for each race-neutral approach is heavily influenced by the local environment. Therefore, when reaching my opinion as to whether a specific strategy might be an appropriate race-neutral approach for UNC-Chapel Hill to consider, it is important to take into account how the context and circumstances of the institution studied compares to UNC-Chapel Hill. Other important considerations include data feasibility (which includes availability) and the impact of the approach on an institution’s ability to maintain educational excellence, including as measured by the academic preparedness levels of accepted applicants.

17. The approaches that have received the most attention are those focused on using non-race proxies instead of explicit race-conscious (also referred to as race-based) preferences. Place-based strategies, such as the percentage plans, give admissions preference to the top ranked students in each high school. Due to racial segregation, it has been theorized that giving preference in this way would result in racially and ethnically diverse cohorts of accepted applicants. As such, the impact of a percentage plan or any approach based on geography, is highly dependent on underlying segregation. This both underscores the importance of the distribution of applicants by high school (or neighborhood) but also has a disconcerting reliance on a social ill to be successful.

18. The experiences of several states that have attempted place-based race neutral approaches, most prominently Texas, suggest that percentage plans can foster some level of diversity, but the results are sensitive not only to the local distribution of applicants across schools but also application rates by race and ethnicity. Institutions using percentage plans have struggled to maintain diversity at the level experienced before implementing a race-neutral approach, and once taking into account demographic changes within their states, simply maintaining previous proportions of Black and Latino students may be an insufficient benchmark for success. Additionally, the Texas Percentage Plan has prompted concerns about guaranteeing admission for such a large proportion of the entering cohort while ignoring other academic factors. Over the longer term, there is also evidence that some families in Texas have reacted to the policy in ways that undermine the effectiveness of the policy to foster racial and ethnic diversity.

19. An alternative approach is to proxy for race using family income or socioeconomic status. Differences in the median family incomes of Black and Latino versus White students has led some to hypothesize that giving preferences to applicants from low-income or disadvantaged backgrounds might result in accepting a racially and ethnically diverse set of applicants. No institution has implemented this strategy while also removing race-conscious policies, so these proposals are hypothetical, but numerous simulation studies have explored the possibility.

20. Most of the research finds that replacing race-based preferences for those related to income or socioeconomic status would result in reductions in the percentage of accepted applicants from racial and ethnic minority groups. The studies that suggest otherwise suffer from limited scope in terms of only studying one moderately-selective institution with one year of data rather than simulating the effects for highly-selective institutions, like UNC-Chapel Hill, over multiple years. Moreover, the data requirements for implementing socioeconomic-based strategies are substantial and not inputs that universities typically collect in the admission process. Again, the results of this research are sensitive to the underlying distribution of income by race in the sample studied, and the study showing the greatest success in maintaining racial and ethnic diversity focuses on the University of Colorado at Boulder, which is very different from UNC-Chapel Hill in terms of selectivity.

21. Even with the limitations of place-based (both percentage plans and broader geographic-based plans) and socioeconomic-based admissions policies, these are strategies I would suggest UNC-Chapel Hill in this litigation evaluate as possible race-neutral approaches. However, it is important to keep in mind that the use of proxies for race and ethnicity as a race-

neutral strategy involves important tradeoffs because, by definition, a proximal measure is not a perfect substitute for the factor it is attempting to approximate. These approaches are only successful if there is a strong relationship between the proxy and an applicant's race in the specific context in which it is being implemented. Therefore, the predicted success of a strategy will depend largely on UNC-Chapel Hill's context in relation to the focal measure. Additionally, using proxies may require an institution to discount other factors important in gauging an applicant's capabilities, and this could have implications for the overall institutional mission, which includes academic excellence.

22. Other options that could be argued to be race-neutral approaches include a test-optional admissions approach, which has been adopted by a set of mostly liberal arts institutions. The final approach considered is eliminating the use of admissions preferences for legacy applicants, which are thought to hinder applicants of color due to historical patterns of enrollment at highly-selective institutions. The evidence on these two kinds of approaches suggest that they may be successful in increasing levels of racial and ethnic diversity in small ways, but neither has been implemented as a race-neutral approach in the absence of race-conscious preferences, and so it seems unlikely that they would be adequate as a stand-alone race-neutral alternative. Also, the fact that these policies have been focused at private colleges and universities, and most of them are fairly small institutions, suggests that these approaches are not appropriate for a large, public university. For these reasons, I do not suggest that UNC-Chapel Hill evaluate them as race-neutral approaches for purposes of this litigation.

III. The Admissions Process of Highly-Selective Universities

A. Focusing on the Subset of Highly-Selective Institutions

23. UNC-Chapel Hill is part of the small subset of highly-selective institutions in the United States, and so my analysis focuses on these institutions. This is also the most relevant group to study in the consideration of race-neutral alternatives because debates about admissions preferences matter most for these colleges and universities, which receive large numbers of applications and must sort through which candidates to accept as part of highly competitive admissions decisions.

24. In 2015-16, only 11.5 percent of public, four-year colleges and universities accepted less than half of their applicants, and only 1.6 percent accepted fewer than 25 percent of their applicants. Relatively few institutions even require the applicant to submit the type of information necessary to choose selectively between candidates. For instance, only 18 percent of public, four-year institutions require students to submit high school class rank information and only 10.5 percent require recommendations as part of the application.¹

B. The Broader Admissions Context and Mission of Highly-Selective Institutions

25. The introduction of a race-neutral approach at a highly-selective institution will be implemented as one part of the much larger admissions process. It is important to understand this larger process because the existing measures and processes, which may be replaced, altered,

¹ U.S. Department of Education. (2016) *Digest of Education Statistics*, Table 305.30.

or given greater priority by a change in admissions policy, will also influence admissions outcomes.

26. Broadly speaking, each college or university sets its educational mission, and the admissions office is tasked with admitting students who further those goals. Especially among selective institutions, academic excellence is a predominant goal (Bowen, 1980; Winston, 1998; Ehrenberg, 2000).² The criteria used by college rankings systems (e.g., the *U.S. News and World Report* rankings) often emphasize the importance of student body test scores, grades, and class rank, and so these measures are also often used by selective institutions to gauge the overall academic excellence of an entering cohort of students.³ Colleges and universities also seek to admit applicants from a range of racial and ethnic groups, thus enabling students and the institution to seek to derive the educational benefits of diversity (Bowen and Bok, 1998; Gurin, 2004).⁴ Public universities also often consider the population composition and specific needs of their state, and they may aspire to have the institution's student body reflect the relative representation of state residents by racial category.⁵

27. Admissions committees select applicants based on past achievement and predictions about future performance and contributions using a range of measures of an applicant's aptitude, attributes, experiences, and goals. These measures frequently include high school grades, high school class rank, the rigor of the courses taken, college entrance exams (e.g., the SAT and/or ACT test scores), recommendations, and information about personal accomplishments and qualities, such as leadership positions, community service activities, and other talents, such as in sports or music. Each measure provides some approximation of an applicant's academic and other abilities and their future potential, and depending on the mission and goals of the institution, the admissions staff can choose which measures to collect and how they are weighed in the evaluation of candidates. Universities vary in whether they use a point system assigned to each criterion or instead have a more flexible evaluation system that compares each applicant's strengths as measured in multiple ways.

C. UNC-Chapel Hill: Background

28. UNC-Chapel Hill is the flagship institution of North Carolina, meaning that it is the premier and most selective of the public institutions in the state. It has a highly-selective

² Bowen, Howard. (1980). *The cost of higher education: How much do universities and colleges spend per student and how much should they spend*. San Francisco: Jossey-Bass. Winston, Gordon. (1998). "Economic research now shows that Higher Education is not just another Business." *Chronicle of Higher Education*, March 27, 1998, page B6. Ehrenberg, Ronald G. (2000) *Tuition Rising: Why Colleges cost so much*. Cambridge: Harvard University Press.

³ Ehrenberg, Ronald G. (2000). *Tuition Rising: Why Colleges cost so much*. Cambridge: Harvard University Press.

⁴ See: Bowen, William G, and Derek Bok. (1998) *The shape of the river: Long-term consequences of considering race in college and university admissions*: Princeton University Press. Also see: Gurin, Patricia, with Gerald Gurin, Eric L. Dey, and Sylvia Hurtado. (2004) "The Educational Value of Diversity." In *Defending Diversity: Affirmative Action at the University of Michigan*, by Patricia Gurin, Jeffrey S. Lehman, and Earl Lewis, with Eric L. Dey, Gerald Gurin, and Sylvia Hurtado. University of Michigan Press.

⁵ Another example of a concern of public institutions is the relative balance of in-state versus out-of-state students being served. By state law, UNC-Chapel Hill must reserve 82 percent of its first-year seats for in-state residents.

admissions process in which it accepted only 24 percent of applicants who applied for the cohort that began in fall 2017.⁶

29. I understand based on documents provided to me and my conversations with members of the Office of Undergraduate Admissions, that, as a public university, the mission of UNC-Chapel Hill is to “serve as a center for research, scholarship, and creativity and teach a diverse community of undergraduate, graduate, and professional students to become the next generation of leaders.” (“Reading Document for the 2015-2016 Application Review Year” UNC0079430.) UNC’s mission “embraces an unwavering commitment to excellence as one of the world’s great research universities,” and recognizes an obligation to “enhance access to learning and to foster the success and prosperity of each rising generation.”⁷ The undergraduate admissions policies and practices are designed to further this mission by admitting a diverse and academically excellent class.

30. Admission to UNC-Chapel Hill is highly competitive. For the first-year class enrolling in 2017, over 40,000 students applied for admission, approximately 9,700 were admitted, and approximately 4,300 enrolled at the university.⁸ Pursuant to the policy of the UNC Board of Governors, the proportion of out-of-state students in the entering first-year class cannot exceed 18 percent.⁹

31. I also understand that UNC-Chapel Hill engages in a holistic review process to evaluate applicants for admission in order to admit a class that is both academically excellent and diverse on a range of dimensions. According to UNC-Chapel Hill, this process is undertaken with the goal of understanding the ways in which each applicant “will likely contribute to the kind of campus community that will enable UNC-Chapel Hill to fulfill its mission.” (UNC0079433.) Under this process, the Office of Undergraduate Admissions looks at each file comprehensively and evaluates applicants based on everything the admissions process reveals about them, including their academic program and performance, standardized test scores, extracurricular activities, written essays, and background and personal characteristics. As part of this holistic review process, the admissions staff evaluates each applicant’s potential contribution to the diversity of the student body and university community. Diversity is broadly defined and encompasses a range of considerations, including an applicant’s socioeconomic status, status as a first-generation college student, race or ethnicity, and ability to offer a unique perspective or experience. The race and ethnicity of any applicant is viewed in the context of everything UNC-Chapel Hill knows about an applicant, and in light of the range of contributions that the applicant might make to UNC-Chapel Hill. (UNC0079430-37.)

⁶ Source: UNC-Chapel Hill Class Profile website (<http://admissions.unc.edu/apply/class-profile-2/>)

⁷ The mission statement was approved by the UNC Board of Governors in November 2009 and February 2014 (UNC0323722) and is available on the website and in major publications (<http://www.unc.edu/about/mission/>). It is also quoted in the Office of Undergraduate Admission’s Reading Document (UNC0079430).

⁸ Source: UNC-Chapel Hill Class Profile website (<http://admissions.unc.edu/apply/class-profile-2/>)

⁹ Source: The UNC Policy Manual, Chapter 700.1.3 (<http://www.northcarolina.edu/apps/policy/index.php?pg=dl&id=450&format=pdf&inline=1>)

IV. Overview of Race-Neutral Approaches and Factors to Consider in the Evaluation of an Admissions Reform

A. Defining a Race-Neutral Approach

32. To frame my opinions, it is first important to define what it means to have an admissions process or policy that is “race-neutral.” It is the practice of creating a racially diverse class without directly and explicitly considering the race or ethnicity category an applicant denotes on the application. In other words, as an admissions committee reviews an applicant’s background, achievements, and future potential, a race-neutral approach does not give any weight or consideration to the race or ethnicity box “checked” by the applicant.

B. Types of Race-Neutral Approaches

33. There are several types of race-neutral approaches, as evidenced by the range of policies, practices, and ideas that have been discussed in the field and attempted by institutions and states. I briefly summarize the types of approaches here and foreshadow the questions and evidence my review will consider. For each approach, based on my review of the research and expertise on the quality of the data, empirical techniques, and analysis, I consider whether UNC-Chapel Hill may want to evaluate the strategy as part of its efforts to realize racial and ethnic diversity while still maintaining the overall university mission of academic excellence. However, I do not perform any empirical analysis to evaluate the potential effects of a race-neutral approach at UNC-Chapel Hill. I understand that UNC-Chapel Hill has retained a separate expert witness to perform those analyses.

34. In terms of my analytical approach, I first consider the effects of simply eliminating race-conscious preferences without implementing a new strategy. The experience of several states that went through abrupt bans of race-conscious admissions policies gives some sense of the effects of this sort of change.

35. I then consider race-neutral approaches that use proximal measures of race in an attempt to produce a diverse set of accepted applicants. There are two major categories that have been studied and debated: place-based admission plans and preferences for applicants from disadvantaged backgrounds. In both instances, and as I discuss in greater detail in the context of each race-neutral approach, both of these categories have been examined as an admissions policy for in-state students.

36. The rationale for focusing on place-based factors hinges on the observation that residential patterns vary by racial or ethnic group. Based on this underlying pattern, giving preference according to high school or a home geographic area (e.g., zip code) could result in accepting a racially diverse set of applicants. Examples of this approach include “percentage plans,” which grant admissions to the top-ranked students from each high school within a state. There has been extensive research on the impact of this type of policy in Texas, with additional observations from the experience in California, and so there is a strong body of evidence from which to reflect on how this approach might be implemented and the range of consequences UNC-Chapel Hill may want to consider when evaluating this as a possible approach. I also discuss the related proposal of basing admissions on the applicant’s zip code.

37. Another set of race-neutral approaches have instead focused on giving admissions preference to applicants with lower family incomes or socioeconomic status. Because many applicants of color are from low-income families, it has been suggested that this approach would produce high levels of racial and ethnic diversity with the additional benefit of increasing access for low-income students at selective institutions. This strategy has not been implemented in the absence of race-conscious policies, but many researchers have done simulation studies to explore the effects of switching to a socioeconomics-based approach. I summarize the research on the potential effects of such policies and describe other factors a highly-selective institution like UNC-Chapel Hill might consider in evaluating this approach.

38. After reviewing the literature on admissions policies that use place-based or income-based criteria, I offer some additional observations about the overall strengths and weaknesses of any approach that attempts to use proxies in place of permitting consideration of race or ethnicity in admissions. These points are based on research on the general use of proxies, which sheds additional light on issues UNC-Chapel Hill may want to consider when exploring these strategies as a possible race-neutral approach.

39. The final strategy I consider is to eliminate admissions preferences for candidates considered “legacies,” defined as applicants who have a family member who attended the college or university. Due to historical patterns in college enrollment, especially at highly-selective institutions, these preferences favor White students over those from racial and ethnic minority groups. Therefore, theory suggests that eliminating such preferences would reduce admissions barriers for minority applicants, and I consider this as a race-neutral approach. I review evidence on the role and size of admissions preferences for legacy candidates to reflect on whether this approach would likely have a meaningful effect on the diversity of the accepted applicants.

40. For each approach, other enrollment management tools, such as financial aid or targeted recruitment, may be needed to help institutions to attract strong applicants from racially and ethnically diverse groups. As shown by the experience of several institutions, these activities can make a difference in the overall effects of a race-neutral approach. However, they are not seen as a stand-alone policy and rather serve as supplemental efforts depending on the context and goals of the institution.

41. I note that although some institutions have elected to make test scores optional in their admissions practices, in part to potentially increase levels of diversity, no school has used a test-optional admissions policy to replace a race-conscious admissions policy, and I am unaware of any academic research suggesting that it could be a feasible or successful race-neutral policy. As a result, I do not consider that as a viable and standalone race-neutral alternative.

C. Factors that Influence the Impact of Any Race-Neutral Approach: The Role of the Admissions and Local Context

42. Regardless of the race-neutral approach, it is important to note that the impact of an admissions strategy will depend partly on the institution’s previously existing admissions practices. For example, if the policy change entails removing the use of certain criteria, then the importance of each remaining criterion will grow. Changing the selection criteria will alter which applicants are accepted by the school along multiple dimensions, and the level of racial

and ethnic diversity (as well as other student characteristics) could rise or fall depending on the exact nature of the change from the previous admission policy. Ultimately when considering a race-neutral alternative, the factors that a university deems important to its process and mission should be taken into account.

43. Another reason why the factors that a university considers as part of its admissions process matter is because they influence the applicant pool. An important determinant of any admissions process is the applicant pool. The characteristics of the applicants determine what is possible for the institution in terms of reaching its admissions goals, and ultimately fulfilling its educational mission. Colleges and universities that attract limited numbers of applicants from underrepresented racial and ethnic groups may face greater challenges in attempting to have a racially and ethnically diverse student body that allows the institution to realize the educational benefits of diversity. Although proactive outreach and the targeted recruitment of underrepresented groups can influence the number of applicants, still only a subset of students apply to selective institutions. Among students in the cohort that graduated high school in 2004, only 12.8 percent applied to a public, selective, four-year institution; the percentage was 6.2 percent for private, selective, four-year institutions.¹⁰ As discussed below in my review of race-neutral approach, the stated admissions policy of an institution could influence who decides to apply and thus what control the admissions committee has over shaping the accepted cohort.

44. The local context will also help determine the applicant pool. Local structural factors, such as the distribution of potential applicants by race into nearby K-12 systems of varying quality, will partly determine the preparation levels of applicants by race. If the surrounding high schools are largely segregated by race with minority applicants being more likely to attend low-performing schools, then these applicants will have lower levels of academic achievement than their non-minority peers.

45. The geographical context is also a critical determinant of the impact of race-neutral admissions strategies that use place-based or socioeconomic preferences. For example, the degree to which race and family income are correlated in the local region determines the consequences of race-neutral alternatives that give preference to students with certain socioeconomic factors. Furthermore, for race-neutral approaches based on place, the most relevant factor in determining how the level of diversity is affected will be the distribution of the population by race and ethnicity across schools, school districts, or zip codes within a particular state, depending on which factors are given preference in admissions. As will be discussed below, the effects (or predicted effects) of race-neutral approaches appear to vary by institution and state, suggesting that what is appropriate for one geographical or institutional setting may produce very different results in another setting.

46. To summarize, the impact of any race-neutral approach is partly dependent on the specific institutional, demographic, and geographic context. It is important to note that the most prominent attempts at implementing (or potentially implementing) race-neutral admissions policies have occurred in Texas, California, Florida, and Colorado. All differ substantially from

¹⁰ Bound, John, Brad Hershbein, and Bridget Terry Long. (2009). "Playing the Admissions Game: Student Reactions to Increasing College Competition." *Journal of Economic Perspectives* 23 (4):119-146. Calculated using the National Center for Education Statistics, Educational Longitudinal Survey (ELS04).

North Carolina in terms of state demographics, income distributions, school systems, and policy environments. As such, when reviewing the evidence on these states' experiences, it is important to consider the underlying factors that have enabled or limited the impact of a particular policy, which may be driven largely by the context of the specific setting.

D. Assessing the Effectiveness of a Race-Neutral Approach in Fostering Racial and Ethnic Diversity

47. When evaluating the effects of a race-neutral approach, most research focuses on *effectiveness*—which research refers to as the impact a change in admissions practice has on the composition of accepted applicants. Because admissions committees still aim to accept a diverse set of applicants, when considering a race-neutral approach, they seek to identify a policy that will still result in the admission of students from a range of racial and ethnic backgrounds. This framing has driven most studies to compare levels of racial and ethnic diversity before and after a change in admissions processes to draw conclusions about the effectiveness of an approach. For example, many research studies have explored whether the percentage of admitted applicants of a certain race increases, decreases, or remains the same after moving from a race-conscious process to a race-neutral approach. The degree to which racial and ethnic diversity is maintained (or rebounds to a previous level at that institution) has been used to gauge the effectiveness of an approach. This is a factor that I believe should be considered by UNC-Chapel Hill in its evaluation of potential race-neutral alternatives.

48. While the important indicator to evaluate is the pool of accepted applicants, it can be difficult to get data on this group. Therefore, much of the research on admissions policies focuses on the cohort of applicants that choose to attend the institution as an approximate measure to gauge the impact of an admissions reform. This group can vary from the pool of accepted applicants because not everyone who is accepted to the institution chooses to attend even though applicant yield rates tend to be very high at highly-selective institutions.

49. The context in which a race-neutral policy is implemented can influence what is considered an appropriate benchmark to evaluate the effectiveness of an approach. Some of the states that have implemented race-neutral policies have also experienced tremendous growth in the numbers of students from racial and ethnic minority groups. In such cases, if there had not been a change in admissions policy, the levels of diversity at in-state colleges and universities could have been expected to increase over time. Therefore, several studies emphasize the importance of taking into account local demographic trends and argue that the appropriate benchmark to use when evaluating the effectiveness of a race-neutral approach should be adjusted upward for institutions in those environments. The specific context is also important if institutions instead have the goal to make their student body reflect the population composition of their state or local area, which can be important for many public institutions.

50. While the research literature on effectiveness has tended to focus on benchmarks based on historic or current demographic trends, admissions professionals are also concerned with whether an admission approach produces a “critical mass” of students of color. Generally speaking, this concept stems from the reasoning that in order for students to realize the educational benefits of diversity, there must be sufficient diversity from both a quantitative (i.e., numbers) and qualitative (i.e., student engagement) perspective or else there will be inadequate

interaction to produce the intended benefits. Moreover, in small numbers, the students in the minority population may feel isolated, unsupported, and subject to exaggerated stereotypes, which could have a negative impact on their performance, even among well-prepared students.¹¹ Emphasis on the importance of having a “critical mass” of students of color complements the effectiveness research by making explicit two points that are implicit in the institutional goal of maintaining high levels of diversity: there must be enough students to make sure an institution is able to realize the benefits of diversity and avoids the potentially detrimental effects of having too few students of a minority group. I do not offer any opinion on how “critical mass” should be measured or whether UNC-Chapel Hill has achieved it.

E. Assessing the Broader Effects of a Race-Neutral Approach on Efficiency and Longer-Term Outcomes

51. Another evaluative factor that researchers have considered in their review of race-neutral approaches is *efficiency*—defined as a question of whether an institution is making the best use of resources to accomplish its goals. Stated another way, the efficiency question asks whether a policy could improve or detract from the workings of the institution, which in education generally refers to the school’s performance as an institution of higher learning with the mission of preparing students intellectually and socially for future opportunities in the labor force and as engaged community members.¹² For universities, this means accepting the applicants judged to academically excellent based on a variety of indicators (e.g., grades, test scores, course selection, etc.) and able to contribute to the larger institution through their talents, perspectives, and leadership. Moving from one admissions policy to another might change the profiles of the accepted applicants, which would have implications for efficiency. For example, if one focuses on a single academic measure, such as standardized test scores, a revised admissions practice that resulted in improving the academic preparedness levels of accepted applicants with respect to this measure while not changing the profiles of accepted students in any other way would be considered to have resulted in a “gain” in efficiency. In contrast, if an admissions policy change lowered the average preparation level of accepted applicants, then this would be considered an efficiency “loss.”

52. Importantly, the incentives created by an admissions policy could influence the longer-term behavior of students (i.e., potential applicants). In systems where institutions value academic indicators, applicants are encouraged to work hard to prepare academically for college, and this also increases the likelihood of future degree completion and labor market success. In contrast, a changed admissions policy that reduces the value placed on academic achievement by a university would lower the incentives for applicants to prepare academically, perhaps with longer-term negative consequences, and so this would be considered inefficient. Together, the consideration of a policy’s *effectiveness* and *efficiency* gives a sense of the multiple tradeoffs inherent between various admissions strategies.

¹¹ Gurin, Patricia, with Gerald Gurin, Eric L. Dey, and Sylvia Hurtado. (2004) “The Educational Value of Diversity.” In *Defending Diversity: Affirmative Action at the University of Michigan*, by Patricia Gurin, Jeffrey S. Lehman, and Earl Lewis, with Eric L. Dey, Gerald Gurin, and Sylvia Hurtado. University of Michigan Press.

¹² For a discussion of this consideration, see Holzer, Harry and David Neumark. (1999) “Assessing Affirmative Action.” Cambridge, MA: National Bureau of Economic Research (NBER) Working Paper No. 7323

53. Admissions policies have additional effects on behavior worth considering in the evaluation of a race-neutral approach. For instance, a policy that favors students at certain high schools could prompt some families to change K-12 schooling decisions or alter earnings. Policies that have defined benefits according to family income have also prompted families to alter or hide income or assets to qualify. These possibilities highlight the need to consider not only the initial effects of an admissions change but also the impact the policy might have on behavior over the longer-term, which could either work to elevate or undermine the policy goals of the institutions and the overall welfare of students.

F. Factors to Consider when Reviewing the Quality of Research and Evidence

54. The research on race-neutral approaches I considered varies in quality and how convincing it is. Some of this work is comprised of basic descriptions of how the proportion of accepted applicants with various characteristics have changed over time in a state or at an institution. However, the more convincing research uses more sophisticated analysis methods to isolate the effect of the policy change from other factors and trends happening at the same time. For example, if examining the effects of a policy change in a state one year, it will be important to consider what other policies and trends happened at the same time.

55. Additionally, it will be important to take into account the counterfactual, or the “but for world,” which is a question of what would have happened in the absence of any policy changes. This is particularly relevant given the fact that the last three decades have been a time of increasing returns in the labor market for those with a college degree and growing numbers of high school graduates (i.e., increasing cohort size). These trends, as well as policy developments related to government financial aid, are partly responsible for fluctuating college attendance both nationally and to varying degrees by region. Therefore, one would have expected application and attendance rates to change over time even if there had not been any admissions reforms related to whether race could be considered. As such, it is important for research to attempt to separate out the effects of admissions reforms from these other important trends to accurately understand what effects race-neutral approaches do and do not have.

56. In this report, I focus upon studies that I believe accomplish the goal of isolating the effects of an admissions policy change and test the veracity of the results by also considering alternative interpretations and counterfactual arguments.

57. Studies also range in the type of data used. The best studies have information on large groups of individual applicants over time and can give a sense of the impact of a policy on an entire institution or state. It is also helpful to understand multiple dimensions of the applicant’s characteristics so that one can examine how a new admissions approach impacts not only the racial composition of accepted applicants but also other factors such as academic preparation levels, family backgrounds, and the distribution of accepted applicants by high school or residence. Several race-neutral approaches focus on these other characteristics of applicants and so it is necessary to understand how the pool of accepted applicants would change in these aspects.

58. For approaches that have not been tried by an institution or are instead ideas or theories that have been debated, there have been some studies that use simulations to predict the

likely effects of a change in policy. Again, in these cases, in my opinion, the most convincing research studies use detailed data and take into account the specific features and trends of the local context. They also attempt to forecast potential changes in applicant behavior because an admissions policy change may influence how applicants choose to prepare for college and where they apply.

V. The Effects of Eliminating Race-Consciousness Admissions

59. I start my evaluation of race-neutral alternatives by first reviewing the experience of institutions that stopped using a race-conscious admissions policy and simply applied the other existing criteria without making other changes to their admissions policies. Several states have experienced this situation in the face of the sudden elimination of race-conscious policies due to court decisions or voter referenda. Although some of these institutions eventually introduced race-neutral strategies, the initial years following the sudden elimination of race-conscious policies gives a sense of what admissions outcomes would likely result by simply taking away consideration of the race or ethnicity of an applicant.

60. California is one example of a state that underwent the rapid elimination of preferences by race or ethnicity. The passage of Proposition 209 in November 1996 ended race-conscious affirmative action in public education.¹³ Although California eventually enacted a percentage plan (discussed below), the first few years after the ban gives a sense of how the composition of the admitted cohort changed without the presence of race-based preferences. It was reported in the news that there was a 57-percent drop in the number of Black applicants and a 40-percent reduction in the number of Latino high school seniors who were accepted for admission. At UCLA, the reductions were similar: 43 percent for Black applicants and 33 percent for Latino applicants (Holmes, 1998).¹⁴

61. Texas provides another example of a state required to remove race-based preferences. In 1996, the *Hopwood v. University of Texas Law School* decision by the Fifth Circuit of the U.S. Court of Appeals prohibited the use of race in admissions in Texas, Louisiana, and Mississippi. Texas later introduced a percentage plan for admittance the following academic year, but the first post-*Hopwood* class at the University of Texas had a much smaller minority enrollment (Pressley, 1997), and the percentage of the cohort that was White went up from 61 percent in summer/fall 1996 to 65 percent in 1997 (Lavergne and Walker, 2003).¹⁵ Tienda et al. (2003) study the enrollment trends at Texas A&M and find that 74.4 percent Whites in the

¹³ Proposition 209 was preceded by the enactment of SP-1 in 1995 by the University of California Board of Regents, which barred the use of “race, religion, sex, color, ethnicity, or national origin as criteria for admission to the University or to any program of study.” The November 1996 vote to authorize Proposition 209 as an amendment to the state constitution provided backing for SP-1. Applicants for admissions to spring quarter 1998 were the first to feel the effects of the new admissions policy.

¹⁴ Holmes, Steven A. (April 5, 1998). “Re-Rethinking Affirmative Action,” *New York Times*.

¹⁵ Pressley, Sue Anne. (August 28, 1997). “Texas Campus Attracts Fewer Minorities,” *Washington Post*, p. A-1. Lavergne, G., and Walker, B. (2003). *Implementation and results of the Texas automatic admissions law (HB 588) at UT-Austin: Demographic analysis, fall 2002*. Austin, Texas: Admissions Research, The University of Texas at Austin.

admitted classes between 1992 and 1996.¹⁶ Horn and Flores (2003) calculate comparable numbers for 1998 and conclude that the percentage of White students had grown to 80.5 percent.¹⁷

62. Across states that have eliminated race-conscious admissions practices without any other change to the admissions process, there have been large reductions in racial and ethnic diversity. Therefore, this does not appear to be a viable strategy for UNC-Chapel Hill to consider given its low effectiveness.

VI. Place-Based Race-Neutral Approaches: The Percentage Plans

A. The Rationale for Using Place-Based Preferences as a Race-Neutral Admissions Approach

63. In the search for a race-neutral approach, some institutions have considered or chosen to use proxies for race and ethnicity. One such approach focuses on where applicants go to high school or live (i.e., place-based policies). The key construct underlying this race-neutral approach is that a place (or high school) is associated with a certain racial or ethnic group. In many regions, some communities are made up of predominantly African-American or Latino students while other communities have predominantly White students, and this pattern of racial segregation across a state (or the area from which an institution gets its applications) could enable a university to use place as a proxy for racial category.

64. The effectiveness of this race-neutral approach in producing diversity within an admitted cohort relies crucially on places (or schools) being segregated by race, with some places having concentrated populations of racial and ethnic minorities. To understand how a place-based admissions strategy might work, consider a policy in which the place-based unit of focus is the high school. If each high school is associated with a certain racial or ethnic applicant profile, then the institution could create a racially and ethnically diverse class by admitting the top students within each school. This is because at some schools, more of the top students will be racial or ethnic minorities, and so they will qualify for admission into the university. Aggregated across the state, if there are enough schools with concentrations of each racial or ethnic group, then the overall cohort of students who qualify for admission will be diverse. The greater the degree of segregation, the higher likelihood that a percentage plan might achieve an effective result that produces a diverse set of accepted applicants.

65. The fact that the effectiveness of place-based admissions approaches on creating diversity hinges on segregated residential patterns makes some uncomfortable with this strategy. Segregation is a social pattern that has been challenged in the courts and been the target of major efforts to remedy community problems.¹⁸ It is therefore disconcerting that the success of the

¹⁶ Tienda, M., Leicht, K., Sullivan, T., Maltese, M., and Lloyd, K. (2003). *Closing the gap?: Admissions and enrollments at the Texas public flagships before and after affirmative action*. Princeton, NJ: Texas Top 10 % Project.

¹⁷ Horn, Catherine L. and Stella M. Flores. (2003) *Percent Plans in College Admissions: A Comparative Analysis of Three States' Experiences*. Cambridge, MA: The Civil Rights Project at Harvard University.

¹⁸ Clotfelter, Charles T. (2011). *After "Brown": The rise and retreat of school desegregation*. Princeton: Princeton University Press.

policy rests on the existence of social ill. Segregation is also associated with unequal K-12 school quality, and an admissions policy that exploits this segregation will also be subject to the consequences of having students with disparate levels of academic preparation. As Thompson and Tobias (2000) note, percentage plans do nothing to address and improve the “inferior education” received by some students.¹⁹

66. Another important factor to the success of a place-based strategy as a race-neutral approach is that application rates must be high among minority students. Even if there are high numbers of minority students who qualify for admission, if they do not apply, then the cohort of admitted students will not be diverse even if place (in this case high school) is strongly associated with a specific racial or ethnic group. Therefore, one question worth keeping in mind in assessing race-neutral alternatives is whether and how place-based admissions policies influence the likelihood that students of all racial and ethnic categories decide to apply to an institution.

B. Percentage Plans: Policy Background and Context

67. The most popular and studied forms of place-based admissions policies are “percentage plans.” These policies focus on the distribution of students across high schools, and they give preference to students in the top part of their high school classes. In other words, a percentage plan is a policy that uses class rank within high school to determine admissions. To reflect on whether a place-based admissions strategy is a possible race-neutral approach for UNC-Chapel Hill to consider in this litigation, I examined the experience of three states that have introduced percentage plans: Texas, Florida, and California. The design of each state policy varies in the exact cutoff for which students are given preference and whether admission is automatic to the student’s choice of institution or if the state decides to which top-tier public institution the student is admitted. This variation is helpful for considering how the specific design of a place-based approach relates to the outcomes experienced by institutions.

68. The Texas Top 10% Plan is the percentage plan that has received the most attention and research. It was passed at Texas House Bill 588 in May 1997 in reaction to the ban on race-based preferences due to the *Hopwood v. University of Texas Law School* ruling in 1996. Under the Texas policy, the top ten percent of each high school within Texas is guaranteed automatic admission to any public university in the state. The high school senior chooses which institution to attend, which makes this percentage plan different than others, and it means that applicants’ behavioral responses in terms of where they apply and where they choose to attend are important in determining the impact of the policy.²⁰

69. The context of the Top 10% Plan is important to understanding why it was created and the effects it had. First, Texas was experiencing, and continues to experience, large growth in its population of students of color. Flores and Horn (2015) note that Texas ranked second only to California in the size of its Latino population and third in terms of the number of Black residents (after New York and Florida). Coupled with the changing demographics of Texas was

¹⁹ Thompson, J. Phillip and Sarah Tobias (2000). “The Texas Ten Percent Plan.” *American Behavioral Scientist* 43(7): 1121-1138.

²⁰ As discussed below, in 2009, UT-Austin was granted the ability to cap the number of applicants admitted automatically to 75 percent of incoming freshmen.

increasing segregation in the state's secondary schools.²¹ Together, these contextual factors are important in considering the effects of the policy.

70. The other two states that have implemented percentage plans share these contextual circumstances: a growing minority population and residential segregation by race and ethnicity. They also experienced bans of race-conscious policies, though in contrast to Texas, California and Florida made admissions changes after voter referenda eliminated affirmative action. California created an admissions system that guarantees admission to a University of California campus for the top four percent of students from each high school. It is a system-wide decision to allocate students to a specific campus, so unlike the Texas Top 10% Plan, students do not get to choose which university to attend. Florida's policy is called the Talented 20 Plan. It guarantees admissions to the top 20 percent of public high school graduates, but the state assigns students to a specific state university.²² The California and Florida plans also required students to complete specific coursework; these requirements did not go into effect in Texas for the entering 9th grade cohort until 2004-05 (Horn and Flores 2003).

71. It is worth noting that percentage plans have only been suggested and implemented as an admissions policy for in-state students. It is unlikely that it would be feasible to implement a policy that guaranteed admission to the top X% of each high school in a nationwide format that included out-of-state students. This is because a highly-selective institution that attracted students from many states would quickly run out of space to admit students. As described by Bowen and Rudenstine (2003), highly-selective institutions receive thousands of applications from top students who are from hundreds and hundreds of schools worldwide, and these institutions are so selective that they turn down the vast majority of these highly-ranked students.²³ As such, a percentage plan would not be an appropriate way for most institutions to admit out-of-state students.

72. To understand the full impact of a percentage plan, I examine how the policy change affected four sets of outcomes: (i) who decided to apply; (ii) the composition of the accepted applicants; (iii) the preparedness level of accepted applicants; and (iv) the longer-term impact on other related behaviors. Investigating this broad set of outcomes helps show not only the feasibility of a potential place-based admissions policy but also the important contextual and other factors that help determine the short- and long-term effects of such a policy. This evidence provides the basis for reflecting on whether percentage plans are an appropriate race-neutral approach and the broader implications of such a policy. My review of the research on percentage plans focuses on Texas, which has been the most-studied site of an actual place-based admissions policy. When possible, I supplement this evidence with research on the outcomes in other states, though there is significantly less research on other contexts.

²¹ Flores, Stella M. and Catherine L. Horn (2015). *Texas Top Ten Percent Plan: How It Works, What Are Its Limits, and Recommendations to Consider*. Educational Testing Service.

²² Horn, Catherine L. and Stella M. Flores. (2003) *Percent Plans in College Admissions: A Comparative Analysis of Three States' Experiences*. Cambridge, MA: The Civil Rights Project at Harvard University.

²³ Bowen, William G. and Neil L. Rudenstine. (2003). "Race-Sensitive Admissions: Back to Basics." *The Chronicle Review* Volume 49, Issue 22, Page B7.

C. The Impact of the Percentage Plans on Applicant Behavior

73. The composition of the accepted applicant pool is not the only outcome of interest as there are additional related outcomes that are relevant for understanding the full effects of an admissions policy change. One such indicator is the propensity of different kinds of students to apply to the institution. As the precursor to any admissions action that might be undertaken by an institution, application rates are an important determinant of the overall effects of an admissions policy. Additionally, understanding the reasons behind changes in application rates is important when considering whether the impact of an admissions policy is unique to certain contexts or institutions.

74. While application rates are an important indicator for understanding the potential relevance of a race-neutral approach, it can be difficult for researchers to get data on where an individual applied to college. Therefore, researchers have used a range of data sources to discern how percentage plans have affected whether and where students from different racial and ethnic groups decide to apply to college. For instance, M. Long (2004) uses data on where individuals sent their SAT scores, which is part of the application process at most four-year colleges and universities, and so score-sending patterns give a sense of likely applications. Using a random sample of ten percent of SAT test-takers from 1996 to 2000, he observes the behavior of students in Texas and California. He compares the score-sending patterns of students in those two states to similar students in other states who did not experience a change in admissions policy. In this way, he is isolating the effects of the changes in Texas and California due to the percentage plans from the general postsecondary trends during that time that affected all students considering college across the United States.²⁴

75. M. Long (2004) finds that the end of affirmative action reduced the likelihood students of color in Texas and California sent their SAT scores to in-state, public colleges. In contrast, White students were much more likely to send their scores after the policy change. Focusing on the most selective public colleges, he estimates that White and Asian-American students in California increased the likelihood of sending a score report to a selective in-state, public college or university by 11 percent. He estimates a smaller increase in Texas (3 percent). M. Long concludes, “minority students in these states [California and Texas] are shifting their SAT score reports sent to lower quality colleges, while white and Asian-American students are doing the opposite” (p. 340). Based on this evidence, the percentage plans appear to have induced racial and ethnic minorities to apply places other than the public flagship institutions, and reductions in the application rate to the top-tier schools would make it more difficult for these institutions to have a diverse applicant pool.

76. Black, Cortes, and Lincove (2015) look at more recent data on application patterns by race in Texas, and they also find evidence that minority students were less likely to apply to selective public colleges under percentage plans. The researchers use administrative data on Texas public high school graduates in 2008 and 2009 and observe which students apply to a Texas public university.²⁵ This is a period of time years after the creation of the Top 10%

²⁴ Long, M. C. (2004). “College applications and the effect of affirmative action.” *Journal of Econometrics* 121(1): 319-342.

²⁵ This is because all Texas public universities use a common online application called ApplyTexas, and they matched their high school data to this application database.

Plan, and so this is not a study that attributes the introduction of the policy as the cause of application rates by race but instead gives a sense of the longer-term admissions environment with a percentage plan in place. They find that students of different racial and ethnic categories have different propensities to apply to public universities, even after taking into account differences in academic preparation. Black, Cortes, and Lincove find that Hispanic students are less likely to apply to college overall and to the most selective public universities, in particular. They observe a gap in application rates between White and Hispanic students that is similar regardless of level of college readiness and high school quality.²⁶ Therefore, it appears that even over the longer term, application rates from racial and ethnic minorities remained at lower levels.

77. Another interesting pattern Black, Cortes, and Lincove identify with Texas data is that the application rates of minority students seem to respond to “the enrollment and outcomes of minority students on a campus” (p. 29). In other words, the application rates of Black and Hispanic students are driven not just by the academic profile of the college or university but also by the student body composition and outcomes for students of color at that school. This underscores the fact that a school with little diversity may have trouble attracting applications from students of color who might potentially attend, even when their admittance is guaranteed under a policy like a percentage plan.

78. Looking at the makeup of the applicant pool, Horn and Flores (2003) find that Florida’s experience differed from Texas and California. At the two most selective institutions, the proportion of the applicant pool that was Black or Hispanic increased after the implementation of the Talented 20 percentage plan. While applications from these groups increased, Horn and Flores found they were still highly underrepresented relative to the population of 15-to-19-year-olds in the state.²⁷

79. There is additional evidence to suggest that after the introduction of the percentage plan in Texas, minority students were less likely to even take a college entrance exam (i.e., the SAT or ACT). Dickson (2006) examines data from the Texas Education Agency from 1994 to 2001, and finds that after the introduction of the Texas Top 10% Plan, Hispanic high school graduates were 1.6 percentage points less likely to take the SAT or ACT, and Black high school graduates were 2.1 percentage points less likely. This translates into losing approximately 1,350 students from underrepresented minority groups each year from even taking the first step in the process of being admitted to a selective public institution. It underscores the potentially chilling effect a change in policy could have on potential students, from as early as the preparatory stages to application behavior. However, as noted below, the effects of the percentage plans varied by context and according to institutional action.

80. Another way to observe how percentage plans affected application rates is to see how application patterns by high school changed after the admissions policy did. In Texas, prior to the introduction of the Top 10% Plan, most students ranked in the first decile of their high schools were almost assured of admission to a public flagship university, but students at less competitive high schools would have had trouble competing with all other students in the state

²⁶ Black, Sandra, Kalena Cortes, and Jane Lincove. (2015). “Apply Yourself: Racial and Ethnic Differences in College Application.” NBER Working Paper No. 21368.

²⁷ Horn, Catherine L. and Stella M. Flores. (2003). *Percent Plans in College Admissions: A Comparative Analysis of Three States’ Experiences*. Cambridge, MA: The Civil Rights Project at Harvard University.

for admission. After the policy was implemented, admissions patterns across high schools began to change. There is some evidence to suggest that the percentage plans increased the share of students who applied from high schools with high concentrations of minority students and low-income students. M. Long, Saenz, and Tienda (2010) document this using 18 years of data on student applications to the University of Texas at Austin (UT-Austin) and Texas A&M University.²⁸ Other research by Niu and Tienda (2010) finds similar results when comparing students just above and below the cutoff for automatic admission: there were increased numbers of applications from students ranked in the top ten percent at high schools with a high proportion of minority students or the state average share of low-income students.²⁹ However, there were reductions in the application rates of minority students from other kinds of high schools. Black and Hispanic students from suburban high schools appear to have enrolled in smaller numbers (Kain and O'Brien 2003), which may explain the decrease in minority applications overall.³⁰

81. Importantly, the admissions policy change had wide-reaching implications not just for racial and ethnic diversity but also to increase the breadth of high schools that sent students to the top universities in the state. M. Long, Saenz, and Tienda (2010) find that the Top 10% Plan also increased the number of applications from students who attended high schools in rural areas, small towns, and small cities, and students from these areas became more likely to go to one of the public flagship universities after the introduction of the percentage plan. To balance the growth in sending students from new schools, the researchers found reductions in the number of students at the flagship institutions from high schools that had previously been the primary feeders into the universities.

82. To summarize, the evidence suggests that the introduction of percentage plans appeared to have negatively affected application rates from students of color. The reduction in applications from students of color have been hypothesized to be due to student concerns that the probability of being accepted had declined. Alternatively, a ban on racial preferences could be interpreted as a signal of a negative campus climate towards racial and ethncal minorities, which would have made the institution a less appealing place to enroll.

83. It may be possible for some institutions to address low application rates among students of racial and ethnic minority groups by increasing targeted outreach and recruitment activities, and this could help mitigate the reductions in the level of diversity after the elimination of race-based preferences. However, given the size of the reductions found in the research literature, application rates would need to rise dramatically among high-scoring, minority students for this strategy to be sufficient in fully restoring diversity to previous levels. Whether this is a possibility depends on the context and local scoring patterns, including the number of potential applicants that score above certain thresholds by race. It may be worthwhile for UNC-Chapel Hill, in the context of evaluating a percentage plan for purposes of this litigation, to

²⁸ Long, Mark C, Victor Saenz, and Marta Tienda. (2010). "Policy Transparency and College Enrollment: Did the Texas Top Ten Percent Law Broaden Access to the Public Flagships?" *The ANNALS of the American Academy of Political and Social Science* 627 (1):82-105.

²⁹ Niu, Sunny Xinchun and Marta Tienda (2010). "The Impact of the Texas Top 10 Percent Law on College Enrollment: A Regression Discontinuity Approach." *Journal of policy analysis and management* 29(1): 84-110.

³⁰ Kain, John and Daniel O'Brien (2003) "Hopwood and the Top 10 Percent Law." University of Texas at Dallas, Cecil and Ida Green Center for the Study of Science and Society mimeo.

consider its own application patterns by race and test score level when gauging whether a percentage plan has the potential of being an appropriate race-neutral approach for them.

84. The evidence also suggests that percentage plans have wide-ranging effects on many kinds of students, including those who are not racial or ethnic minorities and those who come from lower-income families. These effects on other populations are worth considering in the overall analysis of costs and benefits of a new admissions policy as these other trends could further or detract from the goals of a race-neutral approach. In the case of Texas, application rates for Black and Latino students declined overall, though the kinds of schools from which applications originated shifted, and this had with repercussions on the characteristics of admitted students (discussed more in depth below).

D. The Impact of the Percentage Plans on the Racial and Ethnic Composition of Accepted Applicants and Students

1. Overall Impact of Percentage Plans on Racial and Ethnic Composition

85. The main way to judge the effectiveness of percentage plans is to compare levels of diversity before the end of affirmative action to after the race-neutral policy has been enacted. As the oldest program, Texas has been the focus of much of the research in this area. Initially, the Top 10% Plan was championed as a successful race-neutral approach, but as more data became available, multiple studies called into question whether the Texas percentage plan had actually helped institutions to reach previous levels of racial and ethnic diversity (i.e., when race-based preferences were permissible).

86. Kain and O'Brien (2003) provide early estimates of the effect of the Texas Top 10% Plan using a database of school administrative records developed by the UT Dallas Texas Schools Project. They found that the Top 10% Plan did little to increase Black and Hispanic enrollments to pre-ban levels at selective public universities like UT-Austin and Texas A&M the first year after enactment, though the level of diversity in the second year was slightly higher.

87. M. Long and Tienda (2008) do more in-depth analysis focusing on UT-Austin, Texas A&M University, and Texas Tech University, three selective public universities.³¹ They examine patterns of admitted students several years before and after the ban on affirmative action and estimate how the pool changed after the enactment of the Top 10% Plan. The evidence from this study suggests that the Texas percentage plan was not an effective race-neutral approach as levels of racial and ethnic diversity did not return to pre-*Hopwood* levels. An important aspect of the M. Long and Tienda study is that they build into their research design the possibility that institutions may have made other changes to their admissions processes beyond just the percentage plan—i.e., in an effort to restore levels of diversity, admissions committees may have also re-weighted other aspects of an applicant's characteristics to attempt to identify minority candidates in race-neutral ways. The evidence suggests that UT-Austin and Texas A&M did put special effort into boosting the admissions probabilities of Black and Latino applicants in race-

³¹ While they are all selective institutions, the Barron's *Profiles of American Colleges* (1996) classifies UT-Austin as Very Competitive (similar to UNC-Chapel Hill), but Texas A&M University is rated as "Highly Competitive" and Texas Tech University is rated only as "Competitive."

neutral ways beyond implementing the Top 10% Plan. Additionally, these two institutions targeted student fellowships to high schools with low college-going rates, and minority students were a high proportion of the beneficiaries of the aid. However, even with these special efforts, institutions governed by the Top 10% Plan were not able to produce sufficient levels of diversity.³²

2. Taking into Account Demographic Change in the Interpretation of the Effects of Percentage Plans

88. Interpretation of the evidence on the effects of the Texas Top 10% Plan should also take into account the context, and this information suggests that the impact of the policy on racial and ethnic diversity was even smaller than what the above studies recorded. The Texas plan was implemented during a time of substantial growth in the population of Latino students. Therefore, just maintaining levels of racial and ethnic diversity in higher education would actually be movement backwards—in order to truly maintain levels, the proportion of minority students should have increased to mirror the population increases experienced in the state at the same time (Kain and O'Brien 2003, Horn and Flores 2003). As emphasized by Flores and Horn (2015), “ignoring the dramatic changes in the high school graduate population gives the appearance of substantially restoring access for students of color to levels before the percent plan, when, in reality, for a much larger population and share of students of color, it has actually declined” (p. 11). When considering this larger context, the goal of the Top 10% Plan was even higher than originally discussed, and the effectiveness of the policy is called into question even more.

89. Researchers have tried to explicitly take into account demographic changes in an effort to more accurately interpret the acceptance and enrollment patterns spurred by percentage plans. Harris and Tienda (2012) find that once accounting for changes in the size of graduating high school cohorts, Hispanic students were more disadvantaged relative to White students at the state’s top two institutions under the percentage plan in comparison to the previous admissions policy. Their analysis is based on administrative data from UT-Austin and Texas A&M on applications, admitted students, and enrollees, and so this study gives clear insight into this issue.³³ In summary, reductions in diversity are underestimated when simply comparing pre- and post-enactment levels given changes in the underlying proportion of minority students.

3. How the Impact of the Percentage Plans varied by Institution

90. As noted throughout, the specific context of an institution helps to determine the effects of an admission policy. Additionally, actions taken by the institution could also help to reduce or improve the likelihood that a race-neutral approach is able to foster diversity. Because the percentage plans were implemented at the state level, and large states like Texas have more than one highly-selective public institution, this creates an opportunity to observe how the effects of the admissions policy varied by institution within a state. Research on these differences gives

³² Long, Mark and Marta Tienda. (2008). “Winners and losers: Changes in Texas University admissions post-Hopwood.” *Educational Evaluation and Policy Analysis* 30: 255–280.

³³ Harris, Angel L, and Marta Tienda. (2012) “Hispanics in higher education and the Texas top 10% law.” *Race and social problems* 4 (1):57-67.

further perspective on institutional circumstances and factors that influence the outcomes produced by a percentage plan.

91. In Texas, the Top 10% Plan had varying effects at UT-Austin and Texas A&M, with it being more binding at one university in comparison to the other. This means that one school admitted the bulk of their incoming cohort from students who were eligible under the Top 10% Plan while the other institution could admit many more students who were not subject to the percentage plan (i.e., who did not need to be in the top 10% of their high school class) because they had more admissions slots to offer beyond those who qualified for automatic admission. Whether the Top 10% Plan is binding is largely dependent on student application and enrollment behavior, with universities with lower yields needing to accept more applicants in order to have the same enrollment size of a comparable institution with a greater number of applications and a higher yield rate.

92. Fletcher and Mayer (2014) document how the effects of the introduction of the Top 10% Plan varied at institutions in Texas. They compare the behavior of students just above and below the cutoff for automatic admission to a public flagship. Implicit in their research design is that a student who is ranked at the 89th percentile at their high school (and so not eligible for automatic admission) provides a good counterfactual for the student ranked at the 90th percentile (who is eligible under the Top 10% Plan). Using administrative data, they find that applicants just above the cutoff for automatic admission were 17 percentage points more likely to be accepted at UT-Austin but only 4 percentage points more likely to be admitted at Texas A&M than students who did not qualify for automatic admissions. In other words, the Top 10% Plan had a larger impact at UT-Austin; in contrast, students in the second decile (just below the top ten-percent cutoff) are admitted at a rate of 90 percent at Texas A&M, so they are almost assured admissions even without the policy.³⁴

93. Research also suggests that increases in minority enrollment after the first year of the policy and at specific institutions was the result of aggressive recruiting at predominately Black and Latino high schools. At UT-Austin, the Director of Admissions pointed to the introduction of the Longhorn Opportunity Scholarship Program as the reason for increases in minority enrollments after the Top 10% law. This scholarship targets students at inner city and rural high schools and was promised to at least one top ten-percent student at each of 49 high schools that had previously sent few students to the college (Kain and O'Brien 2003).

94. Percentage plans may also affect application behaviors beyond the public institution. Fletcher and Mayer (2014) study this issue with regards to the Top 10% Plan and private institutions in Texas. They use data from two selective, private universities in the state (Rice and SMU) and find that students eligible for automatic admissions were less likely to apply to these competing private universities. And so, the impact of a new policy may involve more than just changing where students are admitted within a public system but also who chooses to attend a public, in-state college or university. As UNC-Chapel Hill evaluates a percentage plan either in the context of this litigation or otherwise, it may want to attempt to consider (if feasible) the broader effects of such a policy on other institutions within the state. The actions of a single

³⁴ Fletcher, J. M. and A. Mayer (2014). "Tracing the effects of guaranteed admission through the college process: evidence from a policy discontinuity in the Texas 10% plan." *Contemporary economic policy* 32(1): 169-186.

institution like UNC-Chapel Hill could have implications for educational opportunity, attainment, and enrollment patterns across North Carolina.

E. The Impact of the Percentage Plans on the Institutional Mission of Academic Excellence

95. The research literature also gives a robust sense of the drawbacks experienced by institutions required to admit applicants according to a percentage plan. In Texas, for example, institutions had concerns about the fact that admittance is automatic under the percentage plan, and so the institution is unable to review and make judgements based on applicant achievement, activities, and characteristics. There have been continual complaints that the Top 10% Plan is a “blunt instrument” that severely restricts the university to considering only one metric—class rank—when they would prefer to also consider measures such as SAT scores, extracurricular activities, and life circumstances. In particular, UT-Austin has complained that the larger number of applicants from the top ten percent has reduced their ability to admit any other students.³⁵ As defined above, the Top 10% Plan was binding for them.

96. Described more broadly, a concern about percentage plans is they may force admissions committees to discount differences in academic achievement across high schools because the relevant comparisons for admissions decisions happen within a school. This problem develops because some high schools are more rigorous academically than others, and schools differ in their average level of academic achievement, whether measured by high school GPA or test scores. As a result, the average level of academic preparedness for students admitted under a percentage plan may be lower than an admissions policy that compares students across schools and takes into account multiple measures of achievement.

97. Institutions might also be concerned with the shift in which high schools its accepted applicants are from under a percentage plan due to the implications this has for the academic preparation levels of incoming students. If the students accepted under the percentage plans are from lower-quality high schools than before and enter with less rigorous preparation for college, then the percentage plan could impact the institution’s mission to maintain educational excellence.

98. To consider the efficiency or effect on academic preparedness measures, researchers have tracked the academic profiles of students admitted under the percentage plans and compared them to previous cohorts (before the policy change) or students who were diverted to other institutions due to the admissions policy. Overall, the research, both performing simulations using student data and examining data after the introduction of percentage plans, finds that admissions policies based on high school class rank, such as percentage plans, result in colleges admitting students with lower levels of academic excellence measured in multiple ways.

99. Before the implementation of the California percentage plan, Koretz, et al. (2002) used data on California students to do a series of simulations with the goal of attempting to understand how different admissions approaches might impact the profile of accepted students.

³⁵ These sentiments have been expressed by Greg Fenves, President of UT-Austin. Watkins, Matthew. (April 5, 2017). “Texas senators mull eliminating Top 10 Percent Rule.” *The Texas Tribune*. Available here: <https://www.texastribune.org/2017/04/05/texas-senators-mull-eliminating-top-10-percent-rule/>

Their simulations suggest that using a place-based admissions policy results in institutions admitting a cohort of students that would have much lower average SAT scores and high school GPAs regardless of race. Moving from accepting the top 12.5 percent of students *across the state* to accepting only the top 12.5 percent of students *within each high school* is predicted to result in a reduction of the mean SAT by 59 points. Their analysis finds the drop in academic measures would be especially large for minority applicants, with the average SAT of admitted African-American and Hispanic students being 135 and 127 points lower, respectively.³⁶ While SAT is not a perfect measure of academic preparedness, this is a meaningful drop in the average achievement level of students, both for the overall cohort and for minority students in particular, and would likely have negative repercussions on the institution's mission to maximize educational excellence.

100. Notably, in response to continual concerns about the percentage plan's effects on its academic mission, UT-Austin successfully petitioned the state legislature in 2009 to change the rule for them. UT-Austin can now cap the number of applicants admitted automatically to 75 percent of incoming freshmen. This usually translates into reducing the automatic admissions guarantee to students in the top seven or eight percent of their high school classes.³⁷ This example underscores how a percentage plan could have negative consequences for the institution, and in the case of UT-Austin, the drawbacks were large enough that the state government altered the policy.

101. The effects of the percentage plan extend not only to those newly-accepted into one of the selective public universities; it also had effects on the students who were shifted to other institutions due to the percentage plans. These are students whose profiles suggest they would have attended UT-Austin or Texas A&M under the old admissions process, before the introduction of the percentage plan. M. Long (2004), in his study of the SAT score-sending patterns of students of different races, observed that the elimination of affirmative action seemed to cause some students of color to shift towards less selective institutions. Outcomes at these schools are lower, and so he expresses concern that these policies could indirectly hurt students of color by concentrating them more in these lower-quality colleges.³⁸ Cortes (2010) confirms this worry using Texas data. She finds that the Top 10% Plan had a negative effect on the persistence and graduation rates of minority students who were displaced by the Top 10% Plan and pushed into less selective colleges, which have lower overall outcomes for all students.³⁹ Again, this underscores how a percentage plan can have rippling effects on the educational outcomes of students in the state—in this case, students displaced by the policy who then attend worse institutions and have worse outcomes.

F. Considerations of the Longer-Term Effects of the Percentage Plans on Student and Family Behavior

³⁶ Koretz, Daniel, Michael Russell, Chingwei David Shin, Cathy Horn, and Kelly Shasby. (2002) "Testing and diversity in postsecondary education: The case of California." *Education Policy Analysis Archives* 10(1): 1-39.

³⁷ Watkins, Matthew. (April 5, 2017). "Texas senators mull eliminating Top 10 Percent Rule." *The Texas Tribune*. Available here: <https://www.texastribune.org/2017/04/05/texas-senators-mull-eliminating-top-10-percent-rule/>

³⁸ Long, Mark C. (2004). "College applications and the effect of affirmative action." *Journal of Econometrics* 121(1): 319-342.

³⁹ Cortes, Kalena E. (2010). "Do Bans on Affirmative Action Hurt Minority Students? Evidence from the Texas Top 10% Plan." *Economics of Education Review* 29(6): 1110-1124.

102. Most of the research on percentage plans has focused on application, acceptances, and enrollment a few years after the policy was introduced. However, over the longer term, it is possible to see the effects of the policy in broader ways that also influence our interpretation of whether the approach is an appropriate race-neutral approach. For instance, the behavioral responses of students to a policy are important to take into account both to understand why an approach has the effect that it does but also how the short-term impact of a policy might differ from the long-term impact. If students (or families) change their actions in response to a policy, then the impact of the reform could evolve over time, weakening the effectiveness of an approach, and there may be unintended consequences worth taking into consideration.

103. In the case of place-based admissions approaches, it is possible that students and their families might alter their residence in an effort to increase their chances of admissions to a selective institution. This is particularly true when the policy is clear and transparent, which characterizes the Texas Top 10% Plan. Students with the greatest incentive to make a school change are those just below the cut-off of being in the top ten percent of the class, and given public information about the average test scores and other academic indicators for each high school and district, a family would be able to easily identify a school at which their student would rank higher and thus be eligible for automatic admission. Of course, this would entail moving the family, which could be costly and not possible for many households, but over time, the incentive created by the Top 10% Plan could influence the residential choices and migration patterns of a nontrivial number of families.

104. Rather than changing their residence, another way families could respond is at the time of school selection. Cullen, M. Long, and Reback (2013) focus on one such time—school transitions from 8th to 10th grade—and investigate the degree to which families respond to the incentives created by the Texas Top 10% Plan. They test whether families are influenced in their choice of the high school their students attend, and because these choices may not involve physically changing their residence, they are not as costly. They conclude: “Among students with motive and opportunity for strategic high school choice, at least 5% enroll in a different high school to improve chances of being in the top 10%” (p. 32). They find that families choose to enroll their children in the neighborhood school rather than transferring to more competitive schools, which was the common practice before the Top 10% Plan.⁴⁰

105. This evidence has several important implications for understanding how a place-based admissions approach might work. First, a student’s residence or high school is not fixed, meaning that it could change over time. In the case of the Top 10% Plan, the concern is that student attendance patterns at certain high schools might change enough to reduce the degree to which specific schools are associated with specific racial or ethnic groups. As a result, the place-based approach will be less likely to produce a diverse set of accepted applicants.

106. In the case of Texas, Cullen, M. Long, and Reback (2013) find that the altered choice of high school typically displaced minority students from the top ten percent of the school that received the new students. The schools these strategic students choose to attend tend to have higher percentages of nonwhite students and greater poverty rates. By reducing the pool of

⁴⁰ Cullen, Julie Berry, Mark C. Long, and Randall Reback. (2013). “Jockeying for position strategic high school choice under Texas’ top ten percent plan.” *Journal of Public Economics* 97 (1):32-48.

students of color eligible for automatic admission, this strategic behavior by some students weakened the ability of the Top 10% Plan to meet its goal of creating a diverse cohort, and it changes who benefits from the opportunities created by the policy.

107. Cullen, M. Long, and Reback emphasize that their results are based only on the first three years after the Top 10% Plan was implemented. Over the longer term, they estimate that the ability to alter school choice could have much greater effects on the makeup of high schools and the impact of the Top 10% Plan on college admissions. Over time, there are also more opportunities for new Texas residents to choose where to move, and this may be influenced by the incentives created by the policy and further reduce the intended effects of this approach.

108. Based on this evidence, as UNC-Chapel Hill predicts the effects of a percentage plan in North Carolina, it should keep in mind the potential for students and families to alter their behavior due to the incentive created by the policy. If it is easy to change schools or families are influenced to make different residential decisions, then this could seriously impact the effects of a percentage plan, especially over the long term. Over time, the effectiveness of the percentage plan in maintaining diversity in the pool of accepted applicants could decline due to this kind of behavioral response.

G. Summary of Observations about the Effects of Percentage Plans

109. With the experience of Texas and some observations on changing application rates and enrollment patterns in California and Florida, there is good evidence on the possible effects of percentage plans. The specifics of each state percentage plan differ, which gives a sense that the design details can influence the set of outcomes spurred by this admissions approach. However, regardless of design, the evidence suggests that past attempts did not effectively replicate the level of racial and ethnic diversity of prior admissions policies, and minority students were significantly underrepresented among applicants and enrollees. There are, however, differences in the magnitude of the effects by state and specific institution within state, which are attributable to local context, policy specifics, institutional characteristics, and student behavior. For example, the growing population of racial and ethnic minorities, coupled with increasing segregation, help to explain the limited success of the Texas 10% Plan, but the results are less positive once one considers that just maintaining previous levels of racial and ethnic diversity is an insufficient benchmark for success given population trends.

110. Whether such a strategy is appropriate for another state or institution depends heavily on many factors related to the specific context. Foremost, there must be high levels of underlying segregation for this policy to result in diverse admissions pools. In other words, for this to work, applicants must be segregated by race. As Bowen and Rudenstine (2003) summarize: “Do we really want to endorse an admissions approach that depends on de facto segregation at the secondary-school level?”⁴¹ Gaertner and Hart (2013) provide a brief summary of the research on percentage plans and highlight that while segregation is a “sad reality of the current distribution of housing,” it is difficult to “rest an admissions policy on the continuation of

⁴¹ Bowen, William G. and Neil L. Rudenstine. (2003). “Race-Sensitive Admissions: Back to Basics.” *The Chronicle Review* Volume 49, Issue 22, Page B7.

segregated living" (p. 375), and they term the strategy as "morally problematic," which captures the views of many critics.⁴²

111. Other important determinants of the effects of a percentage plan include application rates by high school, race and family residential choices. The evidence also underscores the fact that percentage plans can have wide-sweeping indirect effects on other outcomes, such as enrollment patterns for White, rural students, attendance at area private colleges and universities, and the quality of education received by students displaced by the new admissions policy and forced to attend other, often lower-quality, institutions.

112. The institutions that have implemented percentage plans have also expressed concerns about the fact that the approach limits the ability of admissions committees to take into account academic preparation and rigor in their decisions (Watkins, 2017). These two factors are important in supporting future college success, and admissions committees have available to them a number of possible measures to better gauge preparation and potential. Bowen and Rudenstine (2003) push on the notion that "automatic admission... without any consideration of the fact that some high schools are much stronger academically than others" also has drawbacks. In their assessment of percentage plans, like the one implemented in Texas, they ask the question: "Do we want to impose an arbitrary and mechanical admissions standard -- based on fixed rank-in-class -- on a process that should involve careful consideration of all of an applicant's qualifications as well as thoughtful attention to the overall characteristics of the applicant pool?" This calls into question whether percentage plans are really an efficient and effective way to determine which applicants to accept and still maintain academic excellence.

113. Based on all these factors, it is my opinion that UNC-Chapel Hill in this litigation consider and explore the possibility of using a percentage plan as a race-neutral strategy. Although the evidence does not establish its effectiveness, its implementation by other institutions suggests that it is an approach worth further analysis to determine whether it could be a potentially workable approach for UNC-Chapel Hill. Whether a percentage plan is an appropriate policy that results in a diverse set of accepted applicants will depend heavily on the specific context and degree of segregation in North Carolina, however. In addition, the past experiences of other institutions highlight a number of questions and concerns that UNC-Chapel Hill should keep in mind as it evaluates this potential option. This includes the possible effects on application rates and family residential choices. The distribution of high school quality could also have implications for efficiency and the academic profile of accepted students.

VII. Place-Based Race Neutral Alternatives: Considering Preferences based on Geographic Location

A. The Idea of Using Residence to Base Admissions Decisions

114. Another variation of a place-based, race-neutral approach is to rely upon applicant residence rather than high school. Allen (2014) explains this geographic approach. Instead of focusing on high school, she suggests giving admissions preferences based on zip code of residence. Her article is a theoretical exploration of the idea, in which she imagines an

⁴² Gaertner, Matthew N. and Melissa Hart. (2013). "Considering Class: College Access and Diversity." *Harvard Law & Policy Review* 7, no. 2: 367-403.

institution could set an entrance threshold that is a combination of SAT and GPA and then admit students above that threshold to maximize geographic diversity. Within any given zip code, the institution would admit the highest performing applicants first.⁴³

115. It is worth noting from the outset that no institution has implemented such an approach. But for completeness, and given Plaintiff's discussion of a geographic-based plan in the Complaint, I evaluate this theoretical approach.

B. The Predicted Effects of Residence-Based Admissions Preferences

116. No institution has used an admissions approach that gives preferences based on an applicant's zip code, and so there is no research on the workability or effects of such a plan. In some ways, this type of policy could mirror much of what is observed with the high-school-based preferences used in percentage plans, but this depends largely on the degree of segregation by zip code and how much the zip-code boundaries overlap with high school boundaries.

117. However, in other ways, a residence-based policy might produce very different outcomes than a percentage plan. Such an approach might even exacerbate inequality across applicants. This is because while there are state policies that attempt to equalize funding across high schools with the goal of closing gaps in educational quality, there are no such policies at the zip code level. Therefore, there may be large differences in academic preparation levels between the applicants from one zip code to another—differences that are greater than what is observed from one high school to another.

118. As Allen notes, the effects of this policy would be affected by applicant pools, which might change as a result of the policy introduction. There may be large variation in application rates to an institution by zip code that is attributable to variation in how many graduating high school seniors are in each area. The result would be that applicants could experience a large advantage or disadvantage due just to birth cohort. A high-school-based program does not have the same level of concern about this problem. Using a minimum entrance threshold might mean that some zip codes would be shut out altogether (thus not achieving the residential diversity Allen proposes).

119. A zip-code-based policy would also have some of the potential drawbacks of a percentage plan. First, the approach as described by Allen would force admissions committees to disregard valuable information on individual academic preparation and achievement in admissions decisions. The policy's success would also rely on segregation to produce diversity. While Allen notes increasing segregation in the United States, her work does not include a detailed simulation to predict the effect of this policy on diversity, and the effects are likely to be very sensitive to the specific state or region.

120. Similar to the percentage plan discussed above, a zip-code-based admissions policy might be undermined by changes in applicant behavior over the longer term. For example, families might engage in strategic moving decisions to maximize the likelihood of

⁴³ Allen, Danielle. (2014). "Talent is Everywhere: Using ZIP Codes and Merit to Enhance Diversity." In R. D. Kahlenberg (Ed.), *The future of affirmative action: New paths to higher education diversity after Fisher v. University of Texas*. New York, NY: Century Foundation Press.

college acceptance (i.e., they could change to a zip code in which their child has a better chance of being a top applicant). The problem of families acting strategically to alter outcomes would most likely be even worse under a zip-code plan than a percentage plan based on high school class rank because families could make residential moves across zip codes without changing the school of their child, which is hypothesized to be the reason why more families did not move immediately in reaction to the Texas 10% Plan. Gaining an admissions advantage could be as simple as renting a new apartment and would not involve changing schools or other disruptive activities. As such, understanding potential behavioral responses is important to estimating the potential longer-term effects of this approach.

121. Allen admits several questions about her policy proposal. For example, it is unknown how this policy might affect the overall distribution of student body test scores and GPAs. It is also unclear if “sufficient numbers of the overall top-scorers [will] still get in?” (p. 155). These questions relate to an institution’s continuing goal to maintain academic excellence in the face of any admissions policy, and the answers to these questions are vitally important to understanding the impact of a zip-code-based admissions plan.

C. Conclusions about Residence-Based Admissions Policies

122. Because this has only been presented as a hypothetical thought-experiment, there is no research to document the effects of such a policy nor have there been in-depth simulations to predict the results. Instead, there are a number of unanswered questions, and the results of any simulation would be very sensitive to the local context, year of analysis, and potential behavioral responses of families. Therefore, it is not clear if this approach could be a feasible and appropriate race-neutral approach, and there are reasons to believe the drawbacks identified with percentage plans would be exacerbated under a zip-code-based plan. In addition, there may be significant data limitations relating to these plans. For completeness, however, I would suggest that UNC-Chapel Hill in the context of this litigation explore whether it can craft such an approach to consider even though I again emphasize that any concerns with a percentage plan are likely greater with a zip-code-based plan.

VIII. Race-Neutral Approaches Focused on Family Background as a Proxy for Race

A. Definition of a Socioeconomic-Based Approach

123. In the face of eliminating race-conscious policies, researchers have proposed that admissions committees shift their focus to family income and socioeconomic factors. The reasoning stems from the fact that applicants of color are more likely to be from disadvantaged backgrounds, and so family income might serve as a proxy for race or ethnicity. If the correlation between race and income is strong enough, the hypothesis is that giving preference to applicants from low-income families will result in a pool of accepted applicants that is racially and ethnically diverse without expressly considering the demographic category. The practice of giving admissions preference according to family income and/or socioeconomic status has been termed by researchers as “economic” or “socioeconomic” affirmative action.

124. In the literature, researchers have proposed a range of ways economic status could be used as a proxy for race in an admissions process. There have been many simulation studies,

and they vary in the variables used to define which applicants are identified as being from a disadvantaged background. These studies also differ in the type of institutions used in the simulations and whether short-term and long-term effects are taken into account. Plaintiff specifically alleges that “[a]s other elite universities have shown, increased utilization of non-race-based criteria, such as socioeconomic preferences, can promote diversity about as well as racial preferences.” (Complaint ¶ 5.) I review the evidence related to socioeconomic-based admissions approaches to reflect on the quality of the data and analysis and to clarify what effects have been found. I also consider how the specific implementation plan, context, and assumptions of the simulations models influence the predicted impact of a particular class-based admissions proposal. These details are important for determining the degree to which a specific study is helpful in UNC-Chapel Hill’s consideration of this admissions reform as a potential approach.

B. Rationale for a Socioeconomic-Based Approach

125. The central justification for using a socioeconomic-based admissions policy as a race-neutral approach stems from the fact that students from racial and ethnic minority groups are more likely to be from low-income backgrounds. Data confirms that Black and Latino students are much more likely to be from families with lower incomes. According to the U.S. Census Bureau, in 2015, the median family income of White families was \$74,291, but it was only \$45,781 for Black families and \$47,328 for Latino families.⁴⁴

126. Given the fact that families of color tend to be poorer, the theory is that admissions committees could accomplish racial diversity in the accepted pool by using preferences for low-income students. Additionally, focusing on socioeconomic status could also increase economic diversity at selective institutions, another possible social goal. Research has documented that fact that low-income and first-generation students are underrepresented at selective institutions (Kahlenberg, 2015).⁴⁵

C. Research on the Effects of Socioeconomics-Based Admissions Approaches on the Composition of Accepted Applicants

1. The Current Use of Socioeconomics-based Preferences by Institutions

127. Socioeconomic-based admissions policies have received a great deal of attention, and some institutions have incorporated the consideration of family income and status into their admissions policies. For example, as part of a larger holistic admissions process applicable to students not admitted as part of the percentage plan discussed above, the University of Texas takes into account socioeconomic factors when defining an applicant’s “Personal Achievement Index.” Applicants from single-parent homes, who speak a language other than English at home, who have special family responsibilities, and who attend disadvantaged high schools are given additional weight in the admissions review.⁴⁶ Kahlenberg (1996) lists earlier examples of

⁴⁴ U.S. Census Bureau, Current Population Survey, 2016 Annual Social and Economic Supplement.

⁴⁵ Kahlenberg, Richard. (2015). *Achieving Better Diversity: Reforming Affirmative Action in Higher Education*. The Century Foundation.

⁴⁶ Notes by the University in Brief for Respondents at 12-15, Fisher v. Univ. of Tex., No. 11-345 (U.S. Aug. 6, 2012).

universities that have given special admissions preference for low-income students,⁴⁷ and Potter (2014) gives a more recent accounting of public universities that started to consider more socioeconomic factors in their admissions processes after they were no longer permitted to consider race in college admissions.⁴⁸

128. Other research looks at the admissions processes of highly-selective institutions more broadly and finds that it is fairly common for these colleges to give some weight to family socioeconomic status in admissions. Using data from 2004, Reardon, et al. (2015) document that socioeconomic preferences exist widely, but they are generally small. They estimate that the preference given to low-income students is equivalent to the additional preference given to an applicant with a slightly better academic record (a 0.15 standard deviation difference).

2. Using Simulation Research to Understand the Potential Impact of Socioeconomics-based Admissions Policies

129. While there are examples of institutions using socioeconomic preferences in some way, it does not appear that any institution has fully implemented an admissions policy that gives large preference to applicants from disadvantaged backgrounds, and I know of no university that has replaced race-consciousness with an admissions policy based solely on giving preference according to socioeconomic status.⁴⁹ As such, the best evidence on the possible effects of socioeconomic-based approaches come from research using simulations, which have been conducted in a variety of ways. Some studies focus on data from one institution while other research uses data from multiple schools to get a broader sense of the possible effects. Additionally, some of the simulations are straightforward analyses of how an admitted pool of applicants would change if different criteria were used, while other research goes farther to also consider how institutional and applicant behavior might change over time in response to a stated admissions policy that prioritizes certain aspects of an applicant's background.

130. In my review of the evidence, I take into account the specifics of each study because these details determine how convincing the work is. Simulations using data from multiple institutions, especially highly-selective universities like UNC-Chapel Hill, are more relevant to this review than simulations focused on a single institution. Additionally, simulations that use multiple years of data are less susceptible to concerns about how the effects of the policy might differ from year to year. The assumptions that researchers make about how an institution or applicant would respond to a socioeconomic-based policy are also important for considering whether the results are based on the reality of how admissions processes work and how applicants ultimately respond to incentives. As with the analysis of other potential race-neutral approaches, the specific context, including the selectivity and local applicant pool of a particular

⁴⁷ Kahlenberg, Richard D. (1996). "Class-based affirmative action." *California Law Review* 84 (4):1037-1099.

⁴⁸ Potter, Halley. (2014). "Transitioning to Race-Neutral Admissions: An Overview of Experiences in States Where Affirmative Action has been Banned." In R. D. Kahlenberg (Ed.), *The future of affirmative action: New paths to higher education diversity after Fisher v. University of Texas*. New York, NY: Century Foundation Press.

⁴⁹ While Potter (2014) describes several universities that have started to include more socioeconomic-based factors in undergraduate admissions after eliminating race-based preferences, her summary notes that the institutions also made other major changes to their admissions practices, such as introducing a percentage plan (e.g., Texas, California, Florida) or greatly expanding financial aid and recruitment and eliminating legacy preferences (e.g., Georgia).

institution, is important when considering the degree to which a set of results are applicable to this case.

3. Simulations of the Effects of Class-Based Admissions Approaches

131. Cancian (1998) provides one of the early studies that explored the impact of switching to an admissions policy focused on a family's economic standing using data from the 1979 National Longitudinal Survey of Youth, a nationally-representative data set. She simulates the effects of different admission scenarios and concludes that admissions policies based on class or economic status do not produce the same results as programs that target race. In her study, she uses several definitions of socioeconomic disadvantage, including poverty status, parental education level, and family structure, and she notes that the "simulation results suggest that there is substantial, but far from perfect, overlap in the groups that would be eligible under alternative definitions of disadvantage" (p. 103). This highlights that one of the challenges of this admissions approach is even arriving at consensus about the appropriate definition of "disadvantage."⁵⁰

132. An important observation from Cancian's research is that although Black and Latino students are overrepresented among low-income families, they still make up a relatively small proportion of all low-income students in the United States. As such, her simulations suggest that "many minority youths would not be eligible [under class-based admissions] and many eligible youths would not be members of racial or ethnic minority groups" (p. 104). Stated another way, when focusing on the low-income population in the country, one will find that most poor families are White.

133. Therefore, although the rationale for socioeconomic-based strategies emphasizes the make-up of Black and Latino families, the correct question from the institutional perspective is instead: *among the low-income applicants, what percentage are Black or Latino?* If most of the low-income applicants are White, then admissions policies that give preference according to family income will result in giving preference to many more White applicants than Black and Latino applicants. While Cancian (1998) is one of the first to make this point, it is repeated in many subsequent studies to explain why trading race-based preferences for preferences based on family income or socioeconomic status are ineffective and would not enable institutions to maintain their levels of racial and ethnic diversity.

134. Bowen, Kurzweil, and Tobin (2005) also consider the possible effects of having income-sensitive admissions preferences.⁵¹ They use data from 18 selective institutions, including 3 public flagship universities to simulate the effects of giving preference to applicants from low-income families while also removing race-based preferences.⁵² Their analysis concludes that doing so would cut minority enrollment by nearly half. Given the large number

⁵⁰ Cancian, Maria. "Race-Based versus Class-Based Affirmative Action in College Admissions." *Journal of Policy Analysis and Management* 17, no. 1 (1998): 94-105.

⁵¹ Bowen, William G., Martin A. Kurzweil, and Eugene M. Tobin. (2005). *Equity and Excellence in American Higher Education*. University of Virginia Press.

⁵² The 3 public universities in the sample are the University of Virginia, UCLA, and Pennsylvania State University. Although they also have data on the University of Illinois-Urbana/Champaign, that institution is not included in this particular analysis because they do not have information on legacy applicants.

of institutions they investigate, they also examine if the results of trading race-based for class-based preferences differ for public and private institutions. The findings are similar for each sector. For the selective public universities in their sample, they estimate that the percentage of minority students would fall from 17.4 to 8.0 percent. Although the specific institutional context remains critical, this result is particularly relevant for UNC-Chapel Hill because it relates to peer institutions, like the University of Virginia.

135. More recent research uses multiple measures to identify applicants who have faced disadvantage. These measures could include information about family composition, the background of parents, and characteristics of an applicant's school or neighborhood. The advantage of this approach is it takes a more nuanced approach to understanding an applicant's background and defining to whom to give preference, but it does require additional information about the applicant, which could have implications for the feasibility of this plan.

136. Carnevale, Rose, and Strohl (2014) provide a set of simulations on the effects of different admissions approaches using a broader definition for socioeconomic disadvantage.⁵³ They focus on the 193 most selective institutions, and use data from the Educational Longitudinal Study of 2002 to explore how admissions decisions would change under different policies. In their models that explore the effects of an admissions policy with socioeconomic-based preferences, they use a wealth of data on students' academic achievements and background. The "plus factors" include not only family characteristics but also neighborhood measures such as the mean educational level of the neighborhood and poverty at the school-level. Based on their simulations, they find that accepting students in the top ten percent of their high school class (similar to a percentage plan) combined with socioeconomic-based preferences would enable institutions to maintain their levels of racial and ethnic diversity. They also explore the result of a test-based admissions policy, in which institutions just accept the highest scorers, with some adjustment to the score based on socioeconomic disadvantage. The simulation predicts a slight reduction in the percentage of Black students.

137. While the Carnevale, Rose, and Strohl (2014) study explores a series of options, and even the possibility of combining race-neutral strategies, it has several weaknesses that limit how much it contributes to understanding the effects of socioeconomic-based approaches. First, it is not using actual institutional data on applicants and enrollees. Instead, it is using an external dataset that may not be representative of the population of applicants and admitted students that they are trying to measure. Thus, the researchers apply the weights provided in the dataset to try to make the sample representative of the population of students who attend selective colleges. Whether this is successful or not depends on making a number of assumptions about the data.

138. Another drawback of the Carnevale, Rose, and Strohl (2014) study is that the model used does not approximate the reality of admissions practices. In their model, they assume students apply to all colleges, and then the colleges rank the students and fill their slots by starting at the top of the list. This characterization does not fit actual applicant behavior (i.e., students do not apply to 193 colleges), nor does it approximate how admissions committees work, especially those using holistic review. Taken together, these concerns suggest that the

⁵³ Carnevale, A. P., Rose, S. J., & Strohl, J. (2014). Achieving racial and economic diversity with race-blind admissions policy. In R. D. Kahlenberg (Ed.), *The future of affirmative action: New paths to higher education diversity after Fisher v. University of Texas*. New York, NY: Century Foundation Press. (pp. 187–202).

simulations are much more theoretical exercises than a reflection of reality. As discussed below, this study also fails to consider the dynamic effects of an admissions policy change and concerns about data availability for admissions committees.

139. Rather than simulating the effects of a socioeconomic-based policy using data on multiple institutions, Gaertner (2014) describes an experiment performed by the University of Colorado at Boulder (CU Boulder).⁵⁴ This effort developed based on a perceived need to prepare for the passage of a voter referendum that would have prohibited the consideration of race in public education in Colorado. While the measure did not pass, and the admissions committee was not required to implement a race-neutral approach, it still conducted two sets of simulations to explore the tradeoffs between race-based and socioeconomic-based admissions policies.

140. To simulate the effects of a socioeconomic-based approach, CU Boulder developed two indices.⁵⁵ The first was a “Disadvantage Index,” which took into account the applicant’s family background and high school characteristics in an effort to quantify the socioeconomic obstacles faced by an applicant.⁵⁶ They also defined an “Overachievement Index” meant to indicate applicants whose academic credentials, such as high school grade point average and test scores, exceeded what would be expected given their socioeconomic background. Importantly, the universities used a nationally-representative longitudinal dataset from the U.S. Department of Education to construct these indices, which gives some sense of the amount of detailed data necessary to calculate these indices.⁵⁷

141. The first experiment CU Boulder conducted was to simulate the effect of replacing race-based considerations with preferences based on disadvantage and overachievement. This was conducted in 2009 on a random sample of 478 applications. Each application was reviewed twice: first using a race-conscious approach and a second time with all race identifiers removed. In this experiment, CU Boulder gave a fairly large admissions “boost” based on the Disadvantage and Overachievement indices, and their results suggest that a class-based approach could both increase economic diversity as well as maintain high levels of racial and ethnic diversity. Gaertner concludes that “[a]lthough not every [underrepresented minority] applicant is identified by the indexes, those that are identified usually receive a bigger boost than they would have received under race-based affirmative action” (p. 181), which may explain how the percentage of underrepresented minorities accepted increased under the class-based plan. A

⁵⁴ Gaertner, Matthew. (2014). “Advancing College Access with Class-Based Affirmative Action: The Colorado Case.” In R. D. Kahlenberg (Ed.), *The future of affirmative action: New paths to higher education diversity after Fisher v. University of Texas*. New York, NY: Century Foundation Press. (pp. 175-186).

⁵⁵ Gaertner and Hart (2013) provide a detailed account of the methods. Gaertner, Matthew N. and Melissa Hart. (2013). “Considering Class: College Access and Diversity.” *Harvard Law & Policy Review* 7, no. 2: 367-403.

⁵⁶ The family characteristics included parents’ education level, family income level, single-parent status, the applicant’s native language, and the number of dependents in the family. At the high school level, the university measured the percentage of students eligible for free or reduced-price lunch, the school-wide student-to-teacher ratio, whether the high school was in a rural location, and the size of the twelfth-grade class.

⁵⁷ The university used the Education Longitudinal Study of 2002, which is a nationally-representative data set of 10th graders in 2002 and 12th graders in 2004. The students are continuing to be tracked through postsecondary education. The dataset includes administrative data on student assessments and academic transcripts. Moreover, there is extensive survey data with information from the student, their parents, their math and English teachers, and school administrators. The information available far exceeds what would be available about any applicant to an admissions committee.

second experiment simulated what would happen if class-based preferences were added to race-based preferences, and together, Gaertner and Hart (2013) conclude that the preferences work in a synergistic manner with the result of increasing the representation of racial and ethnic minorities in the pool of accepted applicants.

142. Although the CU Boulder experiment is cited as proof that a socioeconomic approach could work as a race-neutral admissions strategy, this study gives an incomplete answer to the question of how such an approach might affect admissions outcomes. Moreover, it prompts many questions and unresolved issues.

143. The first drawback to this study is that it is limited to only one institution (i.e., CU Boulder), and as Gaertner (2014) admits, the “finding is of course limited to the Colorado context” (p. 181). In other words, it is difficult to say that one institution’s experience represents what the experiences of other universities would be, and so this study cannot give us a definitive answer. Moreover, CU Boulder is a moderately-selective institution; in contrast, the authors note that most of the work on this topic focuses on highly-selective colleges and universities (such as the research discussed above). In comparison to CU Boulder, UNC-Chapel Hill is much more selective. In fall 2016, CU Boulder had an admissions rate of 77 percent while UNC-Chapel Hill only accepted 27 percent of applicants that year.⁵⁸ If UNC-Chapel Hill’s much lower acceptance rate had been applied in the CU Boulder simulation, the results would likely change greatly. With a lower admissions rate, many of the accepted applicants in the CU Boulder case would now be rejected, and this could have implications for the racial and ethnic makeup of the group of remaining accepted applicants. In essence, using a different selectivity rate changes one of the fundamental assumptions of the simulation, and so the CU Boulder simulation can tell us little about the predicted experience of UNC-Chapel Hill.

144. The research conducted by CU Boulder has several other limitations that call into question how reliable and generalizable the results are. One concern is that the experiment of replacing race-conscious admissions for class-based considerations was implemented using only one cohort of applicants. It is unknown if the particular year studied is representative for any given year that the policy might be in place. Moreover, it is not clear if the findings are stable when subjected to the natural fluctuations in the size and composition of an applicant pool from year to year. It is also notable that 2009 was during a major economic recession. During recessions, families are more likely to struggle, and so more applicants would have been categorized as facing “moderate” or “severe” disadvantage than would be the case during a non-recession year. It is unclear if that particular cohort or year was unique in some way and whether the effects would be the same for different time frames.

145. The sample used in the CU Boulder simulation also prompts questions about the reliability of the results. The analysis was only performed on a subset of the total applications received. Was the random sample of 478 applications representative of the thousands of in-state applications received that year? While that is the goal of randomization, it is not a guarantee, especially given the small number of applications chosen from the overall pool, and the study does not present summary statistics for the reader to be able to judge whether the randomization

⁵⁸ Source: College Navigator, National Center for Education Statistics, U.S. Department of Education.

was successful. If not, then the results would not be a good estimate of the effects of a socioeconomic-based policy at CU Boulder, or any other institution.

146. By focusing on one institution for only a subset of one cohort of applicants, the CU Boulder simulations shed little light on other important effects one should consider in the evaluation of socioeconomic-based approaches. The first is how an admissions practice change might influence student behavior. As discussed above when reviewing the evidence related to other race-neutral approaches, a change in admissions policy could cause potential applicants to change how they invest their time preparing for college, where they choose to attend school, and whether they decide to apply at all. All these factors would influence the longer-term effects of a socioeconomic-based approach. Additionally, the effects of an admissions reform could differ from institution to institution, even within one state (as was the case for UT-Austin and Texas A&M). Therefore, this study gives a limited view of the potential effects of a socioeconomic-based approach, and to more fully understand how such a policy might affect admissions, one should consider a broader set of institutions over a longer period of time and also consider how applicants might respond.

4. Simulations that Consider the Dynamic Effects of Socioeconomic-Based Approaches on Applicants and Institutions

147. Reardon, et al. (2015) provides one of the more recent simulation studies.⁵⁹ It benefits from building upon the previous research in several ways that makes it a compelling study to understand the possible effects of socioeconomic-based policies. First, the authors explain that their study is framed as modeling a “dynamic system of colleges, rather than a single, static college.” As such, it incorporates multiple years of data rather than being a simulation of one point in time. Moreover, this study looks beyond one institution to consider what would happen if multiple universities changed their admissions policies. There have been many instances in which one university’s policy change spurs a similar response from its peer institutions, and it is already clear that multiple institutions practice some form of giving preference to low-income students (though not as a replacement for race-conscious preferences). Importantly, the study also considers that applicant behavior might change over time, and unlike Carnevale et al. (2014), the authors do not assume that students would apply to all colleges, which is unrealistic given that students do not each apply to hundreds of colleges. All these factors suggest this study is designed to give a much more realistic understanding of the effects of introducing a socioeconomic-based admissions policy.

148. For their simulation, Reardon, et al. (2015) construct a model with 40 colleges and a cohort of students that represent the profiles of students in 2004. Although this model simplifies the actual application process, as noted above, they include elements into the model “that are intended to mimic real-world college selection and enrollment processes.” (p. 14). With this model, they simulate the effects of admissions policies on application, acceptances, and

⁵⁹ Reardon, Sean F, Rachel Baker, Matt Kasman, Daniel Klasik, and Joseph B Townsend. (2015). *Can Socioeconomic Status Substitute for Race in Affirmative Action College Admissions Policies? Evidence from a Simulation Model*. Princeton, NJ: Educational Testing Service. Note: Although this was published by ETS, the research was also funded by the National Institutes of Health (NIH) Office of Behavioral and Social Sciences Research (OBSSR; Award HHSN276200800013C). The authors report that the views expressed are their own and do not necessarily reflect the views of either NIH or ETS.

enrollment. Reardon, et al. (2015) conclude that a socioeconomic-based policy would make colleges less racially and ethnically diverse than when race-based preferences are used.

149. To explain their results, Reardon et al. (2015) suggest that the correlation between socioeconomic status (sometimes abbreviated as “SES”) and race is not high enough to produce racial diversity. In other words, SES and race are not interchangeable because the link between race and socioeconomic status is not strong enough. They conclude that “SES-based affirmative action policies can only work to produce racial diversity (and race-based policies to produce SES diversity) if the correlation between SES and race is high.” This is another way of stating the point made above by Cancian: among low-income students, there are many White applicants, and so the connection between income and race was not strong enough for a socioeconomic-approach to be effective in creating racial and economic diversity. The simulations performed by Reardon et al. suggest that the use of preferences would increase socioeconomic diversity, so the authors point out that their result is not due to “tepid implementation” (i.e., lack of trying).

150. To summarize, I judge the Reardon et al. study to be a much more comprehensive and realistic simulation of the effects of using socioeconomic-based preferences than the other studies reviewed. My opinion stems from the fact that the researchers use a large data set of multiple institutions and incorporate possible changes in behavior over time in their model. The results of this in-depth analysis clearly suggest that using preferences based on socioeconomic status are unlikely to maintain racial and ethnic diversity in institutions.

D. Concerns about the Data Feasibility of Socioeconomic-Based Approaches

151. The research reviewed above gives a sense of various ways socioeconomic-based approaches might be formulated. It is important to note that most of the simulations are theoretical exercises that use data available to researchers to construct measures and indices of disadvantage. However, when considering a race-neutral approach, one must also consider what is feasible for an admissions committee to implement, and many of the data sources used in simulation studies would not be available to institutions ordinarily. Moreover, some of the variables used in constructing indices are indicators that would not normally be known about all applicants to a university.

152. For example, the “Disadvantage Index” constructed by CU Boulder involves many high school-level characteristics that are not usually available to admissions committees (Gaertner, 2014). Another example is the simulation conducted by Carnevale et al. (2014), which has information on the percentage of individuals in an applicant’s neighborhood who hold a college degree—again, this is not information that is usually available to an admissions committee. Gaertner and Hart (2013) acknowledge that the data needed to construct their measures of socioeconomic disadvantage and achievement are not what admissions committees ordinarily have. As they write in their discussion of the CU Boulder simulation: “Historically, [CU Boulder] has not collected detailed socioeconomic data from its applicants; nor has it investigated whether applicants who did not come to [CU Boulder] eventually enrolled in another four-year institution.”

153. More specifically, to construct CU Boulder’s Disadvantage and Overachievement Indices, it was necessary to use a unique, extant data source: the Education Longitudinal Study

of 2002 (ELS2002); Carnevale et al. (2014) used the same data source in their analysis. This is a nationally-representative, longitudinal dataset that has extensive information from administrative data and assessments as well as student, parent, and teacher surveys. In the case of CU Boulder, the dataset was necessary for the calculation of the measures because it provided “the most complete resource available for quantifying the relationships between socioeconomic status, high-school academic credentials, and four-year college enrollment” (p. 386). To adequately measure advantage or overachievement, the institution needed to understand not only its own applicants but also students who did not apply to CU Boulder. The ELS2002 presents some inherent limitations as it is based on the high school graduating class of 2004.

154. A strength of the simulations that use only income information and the study by Reardon, et al. (2015) is that they explicitly attempt to use information that is typically available to admissions committees. This includes information on family income, the educational level of the applicant’s parents, and parental occupation. In their discussion of their results, Reardon, et al. emphasize the fact that their policy is a “practical SES-based” one. It is notable that the more “realistic” policies do not yield the same level of racial and ethnic diversity as race-conscious policies do.

E. Concerns about the Application Rates of Low-income, High-Achieving Students of Color

155. As noted above with other race-neutral approaches, an important determinant of the effects of a socioeconomic-based approach will be the likelihood that students from various backgrounds applying to the institution. Since this sort of plan has not been fully implemented in conjunction with eliminating race-conscious admissions practices, there is no evidence on how potential applicants of color might react to such an admissions reform. However, there is good evidence that documents the fact that low-income students, especially those who are Black or Latino, are less likely to apply to selective institutions.

156. Multiple studies document that many high-achieving, low-income students do not apply to any selective college (Hoxby and Avery, 2013).⁶⁰ For example, Radford and Howell (2014) analyze SAT-takers from 2010 and conclude that 43 percent of students who are academically qualified to gain admissions to a very selective college do not apply to such an institution.⁶¹ There is also research specifically about the enrollment patterns of low-income, high-achievers in North Carolina. Using data from 1999, Bowen, Chingos, and McPherson (2009) found that 40 percent of students who were highly qualified to attend a selective college did not apply. African-American students were found to be more likely to “undermatch” than White students.⁶²

⁶⁰ Hoxby, Caroline, and Christopher Avery. (2013). “The missing ‘one-offs’: The hidden supply of high-achieving, low-income students.” *Brookings papers on economic activity* 2013 (1):1-65.

⁶¹ Radford, Alexandria Walton and Jessica Howell. (2014). “Addressing Undermatch Creating Opportunity and Social Mobility.” In R. D. Kahlenberg (Ed.), *The future of affirmative action: New paths to higher education diversity after Fisher v. University of Texas*. New York, NY: Century Foundation Press. (pp. 133-144).

⁶² Bowen, William G., Matthew M. Chingos, and Michael S. McPherson. (2009). *Crossing the Finish Line: Completing College at America’s Public Universities*. Princeton, NJ: Princeton University Press.

157. These studies also highlight that it will be difficult for any institution to recruit applications from Black and Latino students who are from low-income families. Moreover, the fact that one of the studies (i.e., Bowen, Chingos, and McPherson (2009)) focuses on students in North Carolina, the key population that UNC-Chapel Hill serves, suggests that application rates might be a real concern in the implementation of a socioeconomic-based admissions policy. Another concern is that the number of low-income students of color who are also academically qualified for a selective college or university is small. As a result, a class-based admissions policy is unlikely to yield levels of racial and ethnic diversity that are similar to what occurs under a policy that considers race as part of holistic review. While some of the simulations give a more optimistic prediction, the data makes it clear that application rates to selective colleges from low-income, high-achieving students of color are low (Hoxby and Avery, 2013; Radford and Howell, 2014; Bowen, Chingos, and McPherson, 2009). In addition, the elimination of race-based preferences has been found to have a chilling effect on application rates from Black and Latino students in multiple states, as discussed in an earlier section (M. Long, 2004; Black, Cortes, and Lincove, 2015), and therefore, an admissions reform might further exacerbate the problem of low application rates from certain groups.

F. Summary of the Effectiveness of Socioeconomic-Based Approaches as a Race-Neutral Approach

158. In summary, there have been many simulations that have investigated the possible effects of using socioeconomic-based admissions preferences, but even the most convincing and realistic research suggests that such an approach would not replicate levels of racial and ethnic diversity. The reason the theory does not work in practice is because, while many applicants of color are low-income, there are many more White students who are poor in absolute terms, and so an admissions process that gives preference to socioeconomic status will result in few Black and Latino students being accepted. Simulations that are more optimistic about the role a class-based admissions plan could have on race tend to suffer from being limited in scope and reflecting only the short-term effects of such a policy, and thus they do not give reliable and complete answers on the effects of this approach. Moreover, some of the simulations have data requirements that are not workable or practical for an admissions committee to implement, and the most realistic simulations suggest this approach would not maintain levels of racial or ethnic diversity.

159. Another important factor in the consideration of a socioeconomic-based admissions approach is the importance of financial aid. If institutions are serious about enrolling the applicants they admit, then helping low-income students pay for college is essential. However, only a handful of colleges currently meet the full financial need of a student, and the demand for financial resources would be substantial if the percentage of the incoming cohort included many more low-income students. This is not financially feasible for most institutions, and especially the case for public universities given declining state appropriations.⁶³

160. Whether an income-based admissions process could ultimately work for UNC-Chapel Hill depends greatly on the underlying distribution of family income by race across the

⁶³ Long, Bridget Terry. (2016). *State Support for Higher Education: How Changing the Distribution of Funds Could Improve College Completion Rates*. National Commission on Financing 21st Century Higher Education. University of Virginia, Miller Center.

state. Additionally, academic achievement patterns and application rates of low-income, high-achieving students of color would be important determinants of the viability of this approach in North Carolina. There is already evidence to suggest that low-income, high-achieving students are far less likely to apply to selective institutions, and so this may limit the ability of UNC-Chapel Hill to recruit a racially and ethnically diverse class using a socioeconomic-based approach. The institution should also consider what is feasible for it to implement given some of the simulations use data that is beyond the scope of what an admissions committee typically receives. Nonetheless, I believe that it would be worthwhile for UNC-Chapel Hill in this litigation to evaluate a socioeconomic-based approach as a potential race-neutral alternative.

IX. Additional Research on Using Proxies as a Race-Neutral Approach

A. Considering the Overall Potential of Using Proxies as a Race-Neutral Approach

161. The above sections examine the evidence related to two specific applications of the idea of using proxies as a race-neutral admissions strategy, but they are not the only possible proxies one could imagine using for race. However, it is clear that the effects of using *any* proxy will be determined largely by how closely race is tied to the focal measure. Even if racial and ethnic minorities who are underrepresented in higher education can be identified using a non-race proxy, if the proximal measure is also prevalent among non-minority students, then the policy still may not produce high levels of diversity in the admissions pool (as shown with simulations of economic affirmative action). Other important determinants are academic achievement patterns and application rates for different racial and ethnic groups.

162. Researchers have considered the more general question of whether *any* proxy could be used as an effective race-neutral approach that maintains levels of racial and ethnic diversity among accepted applicants. Although the effects of additional kinds of proxies have not been explored in a detailed way, there have been several studies that discuss the effectiveness and efficiency of proxies as a general strategy. I discuss this additional research because it provides additional insight into factors UNC-Chapel Hill should give further consideration to as it assesses the potential implementation of any proxy-based admissions policy.

B. Studies Considering how the General Use of Proxies might Affect Admissions Outcomes

163. Before considering how the use of a proxy for race might affect outcomes, researchers begin with a general model of how admissions processes work. Chan and Eyster (2003) first consider what happens when racial preferences are intact: they describe admissions committees as working to admit the best-qualified candidates within each racial or ethnic group. This might result in different admissions standards for each group, but within a racial group, the most academically-prepared students would be chosen. However, if admissions committees lose the ability to consider a student's race or ethnicity, but they still desire to have a racially and ethnically diverse class, then Chan and Eyster worry that institutions would admit applicants who are less qualified than the applicants of color who would have been admitted under affirmative action. Without taking race into account explicitly, they would no longer be able to pick the best candidates within each race, and admissions committees would partially ignore an applicant's

qualifications in their deliberations. They conclude that the net effect is that the quality of the students admitted could fall overall.⁶⁴

164. Other researchers, such as Epple, Romano, and Sieg (2003), have also theorized a model of how admissions committees work but emphasize more explicitly the fact that after an affirmative action ban, institutions would seek proxies for race in reformulating their policies.⁶⁵ Fryer, Loury, and Yuret (2008) develop an intricate model of the role of proxies for race.⁶⁶ Ultimately, they describe that admissions committees would shift what they value “from academic traits that predict performance to social traits that proxy for race.” (p. 319). Stated in a more technical way, they describe that admissions policies that ignore race “work by biasing the weights placed on nonracial traits in the admissions policy function so as to exploit the fact that some traits are relatively more likely to be found among the members of a preferred racial group” (p. 322). Like Chan and Eyster (2003), they conclude that the academic qualifications of the accepted set of applicants would fall under a color-blind admissions policy relative to one that considers race and ethnicity explicitly.

165. Fryer, Loury, and Yuret (2008) provide additional support for their conclusions by analyzing the admissions and postsecondary transcript data of students at a range of colleges. They perform a number of simulations using these data to understand how different admissions approaches might affect that composition of accepted applicants. They conclude that under a color-blind admissions policy that values social characteristics over academic characteristics, institutions would suffer in terms of large efficiency costs that are analogous to completely ignoring test scores when deciding admissions. In other words, although Fryer et al. (2008) is not suggesting that academic characteristics should be ignored, they conclude that by proxying for race, admissions committees would value academic attributes less. While test scores are not perfect measures of an applicant’s ability, completely ignoring student performance in selective admissions would be very costly in terms of efficiency and potentially creating an incoming cohort of students with lower levels of academic preparedness than previous policies produced.

C. Other Effects from Using Proxies in Admissions Policies

166. The three studies discussed in this section all underscore the fact that race-blind policies might discount academic measures in admissions decisions. Fryer, Loury, and Yuret (2008) consider the larger effects such a practice might have on the behavior of applicants. They conclude that the predicted changes in admissions processes—namely shifting to focus more on proxies for race and away from academic performance—would reduce incentives for applicants to prepare academically. In the long run, the researchers conclude that “color-blind policies necessarily create a situation where the relative importance of traits for enhancing an applicant’s prospects of being admitted diverges from the relative significance of those traits for enhancing an applicant’s post-admissions performance” (p. 322). Stated another way, applicants would put

⁶⁴ Chan, Jimmy and Erik Eyster. (2003). “Does Banning Affirmative Action Lower College Student Quality?” *American Economic Review* 93: 858–72.

⁶⁵ Epple, Dennis, Richard Romano, and Holger Sieg. (2003). “The Practice and Proscription of Affirmative Action in Higher Education: An Equilibrium Analysis.” Cambridge, MA: National Bureau of Economic Research (NBER) Working Paper #9799.

⁶⁶ Fryer, Roland G., Glenn C. Loury, and Tolga Yuret. (2008). “An Economic Analysis of Color-Blind Affirmative Action.” *Journal of Law, Economics, and Organization* 24 (2):319-355.

less effort toward preparing academically for college, and though this would not hurt their chances of admission under revised criteria, this could hurt their ability to be successful in higher education over the longer term, suggesting that changes to admission policies might have far sweeping effects on the signals sent to students about what is important.

D. The Experience of K-12 Education with using Proxies in Selective Admissions

167. Higher education is not the only field that has considered the use of proxies in admissions processes, and examples from related contexts can help shed light on the options available to institutions. At the K-12 level, competitive high schools also use selective admissions processes to sort through applicants. Ellison and Pathak (2016) consider the experience of magnet schools in Chicago and examine whether there are effective substitutes from using racial quotas.⁶⁷ Using extensive data on students in the Chicago Public Schools, they conclude that “no race-neutral policy restores minority representation to prior levels without substantial inefficiency,” which they characterize as schools accepting students with far lower achievement scores under a race-neutral strategy. They suggest that, at the top two exam schools in the city, “about three-fourths of the reduction in composite scores could have been avoided by explicitly considering race.”

168. As part of their analysis, Ellison and Pathak consider an admissions strategy that would allocate seats by socioeconomic tier, with the best students being accepted within each economic strata. Still, they find that doing this would not achieve high enough levels of minority representation at the top two schools. Key to this result is the fact that they find being a racial or ethnic minority is a “weak predictor of low-income status once we know that a student is high achieving” (p. 51). In other words, many high-achieving students of color are not from low-income families, and similarly, many students who are from low-income families and have high levels of achievement are not minorities.

169. Overall, Ellison and Pathak (2016) note concerns that place-based and economic-based alternatives discount the prior achievement of applicants when making admissions decisions. This could result in hurting an institution’s mission of academic excellence. They emphasize that a race-based plan would achieve 50 percent minority representation while simultaneously keeping average composite scores at a very high level (p. 51).

E. Conclusions about the Tradeoffs of Policies that Use Proxies for Race and Ethnicity

170. To summarize, using nonracial proxies for race and ethnicity is not a perfect solution for maintaining racial diversity because, by definition, a proximal measure is not a perfect substitute for the factor it approximates. According to theory and simulations using student data, the practice of using proxies results in costs and compromises relative to policies that take into account race and ethnicity explicitly. As noted by Andrews and Swinton (2014) in their summary of the literature, “because schools are not perfectly segregated and academic

⁶⁷ Ellison, Glenn and Parag A. Pathak (2016). “The Efficiency of Race-Neutral Alternatives to Race-Based Affirmative Action: Evidence from Chicago’s Exam Schools.” Cambridge, MA: National Bureau of Economic Research Working Paper 22589.

ability is not wholly represented by class rank, this exercise does not necessarily grant admittance to the most academically able minority students" (p. 367).⁶⁸ Fryer, Loury, and Yuret (2008) conclude that the most effective way of creating a racially diverse class that is also academically able is to admit the most able members of each group of interest.

171. Ultimately, the tradeoffs from using proxies depend on the degree to which the admissions committee discounts other factors important to gauging an applicant's academic preparedness and factors related to future student success. As it continues to evaluate potential race-neutral alternatives, UNC-Chapel Hill should keep in mind what tradeoffs would be necessary if a proxy-type admissions policy was implemented in their context and with their applicant pool.

X. Race-Neutral Approaches Focused on Eliminating Other Admissions Preferences

A. Other Preferences used in Admissions Processes and the Rationale for Eliminating Preferences for Legacy Applicants

172. While much of the focus has been on preferences based on a student's race and/or ethnicity, these are not the only preferences admissions committees use when selecting applicants. Some of the other admissions preferences documented in the literature include those for the children of alumni (i.e., legacy candidates), athletes, students in the performing arts, and applicants from faraway places that are not well represented at an institution. The removal of the consideration of race within this larger system of admissions preferences means that the other sets of preferences could become more dominant. In fact, these other preferences could crowd out students from certain racial and ethnic groups if they are categories that are rare among applicants of color (e.g., being the child of an alumnus). In other words, admissions committees have multiple sets of preferences that may balance each other, and when one set is removed, the remaining preferences may result in skewing the characteristics of the accepted set of applicants.

173. At selective institutions, a major category of preferences are based on legacy status, which is defined as having a family member who also attended the school. Legacy applicants may be given an advantage in the admissions process in an effort to keep alumni happy, which influences college rankings and charitable giving, and because the yield rate tends to be higher for legacy admits. Descriptively, it does appear that legacy applicants are much more likely to be accepted into a college. According to Golden (2003), Harvard accepted 11 percent of undergraduate applicants overall but 40 percent of legacy candidates. At the University of Pennsylvania, the percentages were 21 percent overall and 41 percent of legacies.⁶⁹

174. Some of the advantage legacy candidates receive likely stems from the fact that they also tend to have strong academic preparation (i.e., benefiting from having a parent who attended a selective college). However, after taking into account their achievement levels, the estimated advantage is still quite large. Hurwitz (2011) analyzes data on 133,236 high-achieving students who apply to multiple highly-selective institutions, and he compares the likelihood of

⁶⁸ Andrews, Rodney J, and Omari H Swinton. (2014). "The Persistent Myths of "Acting White" and Race Neutral Alternatives to Affirmative Action in Admissions." *The Review of Black Political Economy* 41 (3):357-371.

⁶⁹ Golden, Daniel. (January 15, 2003). "Admissions Preferences Given to Alumni Children Draws Fire." *Wall Street Journal*.

being accepted at the school for which the student is considered a legacy candidate in comparison to other colleges at which they are not legacies. Hurwitz (2011) concludes that legacy applicants are 3.13 times more likely to be accepted. He also finds that the magnitude of the advantage given to legacy candidates depends on how close the familial tie is for the applicant; applicants who are the child of an undergraduate alumnus/a receive a larger advantage than the grandchild of an alumnus/a or the child of a graduate school alumnus/a. The advantage given to a legacy applicant also is larger for those who have middling SAT scores.⁷⁰

175. Due to historical enrollment patterns at selective colleges and universities, legacy applicants are far less likely to be from Black or Latino families. In their analysis of 18 highly-selective colleges, Bowen, Kurzweil, and Tobin (2005) found that 6.7 percent of applicants who were legacies were from underrepresented minority groups in comparison to 12.5 percentage of all other students.⁷¹ As such, the preference for legacy applicants puts students in these racial and ethnic groups at a disadvantage and may work counter to having a racially and ethnically diverse class. In the context of a school with race-neutral admissions, preferences given to legacy candidates may outweigh all other efforts to have a racially diverse student body so that even highly-accomplished minority applicants are denied admissions while their counterparts are not. To address this concern, one approach would be to remove or reduce preferences for legacy candidates so that most students of color are no longer put at a disadvantage.

B. The Effects of Eliminating Legacy Preferences

176. It is unclear if any institution has eliminated legacy preferences as a race-neutral approach. Potter (2014) documents that the University of Georgia ended using legacy preferences after a court order banned the consideration of race in admissions, but the university also broadened their admissions criteria and starting to take into account more socioeconomic factors, so it is unclear whether their experience is driven by changing the way they handle legacy applicants.⁷² However, simulations on data of existing pools of applicants suggest that eliminating legacy preferences would only have a small effect on racial and ethnic diversity. Espenshade, Chung, and Walling (2004) explore this issue using data on the admissions decisions of 124,374 applicants. They document the advantage given to legacy candidates. Using the same data, Espenshade and Chung (2005) simulate the effects of taking away race-based preferences and find that this would substantially decrease levels of diversity. However, they find that legacy preferences only “mildly displace” applicants from racial and ethnic minority groups. Therefore, it does not appear that removing preferences for legacy candidates would do much to restore levels of diversity.⁷³

177. Given that the available evidence does not provide any basis to support the use of this alternative as a feasible or workable race-neutral alternative, I do not recommend that UNC-

⁷⁰ Hurwitz, Michael. (2011). “The Impact of Legacy Status on Undergraduate Admissions at Elite Colleges and Universities.” *Economics of Education Review* 30 (3):480-492.

⁷¹ Bowen, William G., Martin A. Kurzweil, and Eugene M. Tobin. (2005). *Equity and Excellence in American Higher Education*: University of Virginia Press.

⁷² Potter, Halley. (2014). “Transitioning to Race-Neutral Admissions: An Overview of Experiences in States Where Affirmative Action has been Banned.” In R. D. Kahlenberg (Ed.), *The future of affirmative action: New paths to higher education diversity after Fisher v. University of Texas*. New York, NY: Century Foundation Press.

⁷³ Espenshade, Thomas J, and Chang Y. Chung. (2005). “The opportunity cost of admission preferences at elite universities.” *Social Science Quarterly* 86 (2):293-305.

Chapel Hill focus its analysis on the removal of legacy preferences as a race-neutral alternative. Though the effects of doing so depend highly on the degree to which the institution gives preferences to legacy candidates, it is unlikely that the effects of eliminating such preferences will be large enough to serve as an alternative admissions policy.

XI. Conclusion

178. This report reviews what I believe to be an exhaustive list of potential race-neutral alternatives that UNC-Chapel Hill might consider. For each approach, I have taken into account the quality of evidence available to assess what is known about the direct and indirect effects of each type of admissions policy. In summary, based on this extensive review, I suggest that UNC-Chapel Hill explore the potential effects of applying an admissions policy based on high school class rank (i.e., a percentage plan), based on socioeconomic status, or geographic location. Still, as shown by the research evidence, whether either admissions policy is an appropriate race-neutral policy for UNC-Chapel Hill will depend greatly on the specifics of the local context of the university and the feasibility of obtaining the information necessary to implement an alternative admissions strategy.

179. I reserve the right to amend or supplement my report and opinions.

Dated: January 12, 2018

Respectfully submitted,



Bridget Terry Long

Exhibit A:

**Curriculum Vitae of Bridget Terry Long, Ph.D.
Saris Professor of Education and Economics
Harvard Graduate School of Education**

Bridget Terry Long, Ph.D.
Harvard Graduate School of Education
Gutman Library 465, 6 Appian Way, Cambridge, MA 02138
bridget_long@gse.harvard.edu ~ <http://www.bridgetterrylong.com>

ACADEMIC POSITIONS

Academic Appointments

Saris Professor of Education and Economics (endowed chair), Harvard Graduate School of Education (2011 to present). Formerly called the Xander Chair of Education and Economics.
Academic Dean, Harvard Graduate School of Education (2013-17)
Professor of Education and Economics, Harvard Graduate School of Education (2009-11)
Associate Professor of Education and Economics, Harvard Graduate School of Education (2004-09)
Assistant Professor, Harvard Graduate School of Education (2000-04)

Research Affiliations

Research Associate, National Bureau of Economic Research (NBER) (2009 to present)
Research Affiliate, Center for Analysis on Postsecondary Education and Employment (CAPSEE) (2011-16)
Research Affiliate, National Center of Postsecondary Research (NCPR) (2006-12)
Faculty Research Fellow, National Bureau of Economic Research (NBER) (2003-09)
Visiting Scholar, Boston Federal Reserve Bank, New England Public Policy Center (2006-07)
Scholar, Young Faculty Leadership Forum, Harvard University (2002-06)
Associate, National Center for Public Policy and Higher Education, Associate (2002-03)

EDUCATION

Ph.D. Harvard University, Economics (2000). *Dissertation: The Market for Higher Education: Economic Analyses of College Choice, Returns, and State Aid Policy.*
Committee members: Caroline Hoxby (chair); Lawrence Katz; Claudia Goldin.

M.A. Harvard University, Economics (1997) Fields: *Labor Economics, Public Finance, Urban Economics.*

A.B. Princeton University, Economics (1995) Certificate in Afro-American Studies.

Courses Stanford University (Summer 1993) American Economic Association (AEA) Graduate School Preparation Program.

BOARDS AND ORGANIZATIONAL LEADERSHIP

Board Member, MDRC (2010 to present). Member of the Education Sub-Committee.
Board Member, Society for Research on Education Effectiveness (SREE) (2014 to present)
Trustee, Buckingham Browne & Nichols (2016-present)
Executive Committee and Chair, Real Estate Committee (2017-present)

Member, Head of School Search Committee (2017)

Board Member, National Board of Education Sciences (NBES), Institute of Education Sciences (IES), U.S. Department of Education. Presidential Appointment with Senate confirmation. *Member* (2010-16). *Vice Chair* (2010-11). *Chair* (2011-13).

Inaugural Review Panelist, Lyle Spencer Research Awards, Spencer Foundation (2014-16)

Board Member, Public Education Nominating Council for Massachusetts. Appointed by Gov. Deval Patrick (2007-15)

Board Member, Commonwealth Corporation (2008-2013)

Member, Board of Directors, Soldiers Field Park Children Center. Chair of the Educational Policies Committee. (2010-12)

Trustee, Newbury College, Brookline, MA (2004-09). Also Chair of the Academic and Enrollment Management Committee and Member of the Executive Committee.

PEER-REVIEWED JOURNAL ARTICLES

Boatman, Angela and B. T. Long. (forthcoming) "Does Remediation Work for All Students? How the Effects of Postsecondary Remedial and Developmental Courses Vary by Level of Academic Preparation." *Educational Evaluation and Policy Analysis*.

Castleman, Benjamin L., B. T. Long, and Zachary Mabel. (forthcoming). "Can Financial Aid Help to Address the Growing Need for STEM Education? The Effects of Need-Based Grants on the Completion of Science, Technology, Engineering and Math Courses and Degrees." *Journal of Policy Analysis and Management*.

Bettinger, Eric and B. T. Long. (2018) "Mass Instruction or Higher Learning? The Impact of Class Size in Higher Education." *Education Finance and Policy* 13(1): 97-118. [equal authorship]

Castleman, Benjamin and B.T. Long. (2016) "Looking Beyond Enrollment: The Causal Effect of Need-Based Grants on College Access, Persistence, and Graduation." *Journal of Labor Economics*, 34(4), 1023–1073. Also available as NBER Working Paper No. 19306.

Boatman, Angela and B. T. Long. (2016) "Does Financial Aid Impact College Student Engagement? The Effects of the Gates Millennium Scholarship on Academic and Extracurricular Behaviors." *Research in Higher Education* 57(6), 653-681.

Bettinger, Eric, B. T. Long, and Eric Taylor. (2016) "When Inputs are Outputs: The Case of Graduate Student Instructors? The Impact of Teaching Fellows on Student Outcomes." *Economics of Education Review* 52: 63-76. [equal authorship]

Bettinger, Eric, B. T. Long, Philip Oreopoulos, and Lisa Sanbonmatsu. (2012) "The Role of Application Assistance and Information in College Decisions: Results from the H&R Block FAFSA Experiment." *Quarterly Journal of Economics* 127(3): 1-38. Also available as NBER Working Paper No. 15361. [equal lead authorship with Bettinger and Oreopoulos]

Bettinger, Eric and B. T. Long. (2010) "Does Cheaper Mean Better? The Impact of using Adjunct Instructors on Student Outcomes." *Review of Economics and Statistics* 92(3): 598–613. [equal authorship]

Bound, John, Brad Hershbein, and B. T. Long. (2009) "Student reactions to Increasing College Competition." *Journal of Economic Perspectives*, 23(4): 119–46. A longer version is available as NBER Working Paper No. 15272. [equal authorship]

Bettinger, Eric and B. T. Long. (2009) "Addressing the Needs of Under-Prepared College Students: Does College Remediation Work?" *Journal of Human Resources* 44(3): 736-771. [equal authorship]

Long, B. T. and Michal Kurlaender. (2009) "Do Community Colleges provide a Viable Pathway to a Baccalaureate Degree?" *Educational Evaluation and Policy Analysis* 31(1): 30-53.

Osili, Una Okonkwo and Long, B. T. (2008) "Does Female Schooling Reduce Fertility? Evidence from Nigeria." *Journal of Development Economics*, vol. 87, no. 1, pp. 57-75.

Long, B. T. (2007) "The Contributions of Economics to the Study of College Access and Success." *Teachers College Record*, vol. 109, no. 10.

Long, B. T. and Erin K. Riley. (2007) "Financial Aid: A Broken Bridge to College Access?" *Harvard Educational Review*, vol. 77, no. 1, Spring.

Bettinger, Eric and B. T. Long. (2005) "Do Faculty Members serve as Role Models? The Impact of Faculty Gender on Female Students." *American Economic Review*, vol. 95, no. 2. [equal authorship]

Bettinger, Eric and B. T. Long. (2005) "Remediation at the Community College: Student Participation and Outcomes." *New Directions for Community Colleges*. [equal authorship]

Long, B. T. (2004) "Does the Format of an Aid Program Matter? The Effect of In-Kind Tuition Subsidies." *Review of Economics and Statistics*, vol. 86, no. 3, pp. 767-782.

Long, B. T. (2004) "How do Financial Aid Policies affect Colleges? The Institutional Impact of the Georgia HOPE Scholarship." *Journal of Human Resources*, vol. 39, no. 3.

Long, B. T. (2004) "How Have College Decisions Changed Overtime? An Application of the Conditional Logistic Choice Model." *Journal of Econometrics*, vol. 121, no. 1-2: pp. 271-296.

Long, B. T. (2003) "The Connection between Government Aid and College Pricing." *Journal of Student Financial Aid*, vol. 33, no. 2.

RESEARCH ARTICLES IN EDITED VOLUMES

Long, B. T. (2015) "The Financial Crisis and College Enrollment: How have Students and Their Families Responded?" *How the Financial Crisis and Great Recession Affected Higher Education*. Jeffrey Brown and Caroline Hoxby, Eds. University of Chicago Press.

Long, B. T. (2014) "Addressing the Academic Barriers to Higher Education." *Policies to address Poverty in America*. Melissa S. Kearney and Benjamin H. Harris, Eds. Washington, DC: Brookings Institution, The Hamilton Project.

Long, B. T. (2013) "Supporting Access to Higher Education." *Legacies of the War on Poverty*. Martha Bailey and Sheldon Danziger, Eds. The National Poverty Center Series on Poverty and Public Policy. New York: Russell Sage Foundation.

Bettinger, Eric, Angela Boatman, and B. T. Long. (2013) "Student Supports: Developmental Education and Other Academic Programs." Cecilia Rouse, Lisa Barrow, and Thomas Brock, Eds. *Future of Children: Postsecondary Education in the U.S.*, vol. 23, no. 1, Spring. [equal authorship]

Long, B. T. and Angela Boatman. (2013) "The Role of Remediation and Developmental Courses in Access and Persistence." Anthony Jones and Laura Perna, Eds. *The State of College Access and Completion: Improving College Success for Students from Underrepresented Groups*. New York:

Routledge Books.

Long, B. T. (2012) "Remediation: The Challenge of Helping Underprepared Students." In Andrew P. Kelly and Mark Schneider, Eds. *Getting to Graduation: The Completion Agenda in Higher Education*. Baltimore: The Johns Hopkins University Press.

Long, B. T. (2011) "The New Financial Aid Policies: Their Impact on Access and Equity for Low-Income Students." Lisa M. Stulberg and Sharon Lawner Weinberg, Eds. *Diversity in American Higher Education: Toward a More Comprehensive Approach*. New York: Routledge Books.

Long, B. T. (2010) "Higher Education Finance and Accountability." In Kevin Carey and Mark Schneider, Eds. *Accountability in American Higher Education*. New York: Palgrave Macmillan and American Enterprise Institute.

Long, B. T. and Stella M. Flores. (2010) "Policy, Finance and Economics." In Shaun Harper and Sylvia Hurtado, Eds. *Racial and Ethnic Diversity in Higher Education*. Association for the Study of Higher Education (ASHE) Reader Series. Pearson Publishing

Long, B. T. (2010) "High School Dropout Prevention and College Preparatory Programs." In Phillip B. Levine and David J. Zimmerman, Eds. *Targeting Investments in Children: Fighting Poverty When Resources are Limited*. University of Chicago Press, Robin Hood Foundation, and the National Bureau of Economic Research.

Long, B. T. (2010) "Making College Affordable by Improving Aid Policy." *Issues in Science and Technology*. Washington, D.C.: National Academy of Sciences, Division of Behavioral and Social Sciences and Education, Summer.

Long, B. T. (2010) "Beyond Admissions: Reflections and Future Considerations." In Mark Long and Marta Tienda, Eds. *Beyond Admissions: Re-thinking College Opportunities and Outcomes*. The ANNALS of the American Academy of Political and Social Science, vol. 627, January.

Long, B. T. (2009) "Financial Aid and Older Workers: Supporting the Nontraditional Student." *Strategies for the Improving Economic Mobility of Workers*. Kalamazoo: W.E. Upjohn Institute for Employment Research and the Federal Reserve Bank of Chicago.

Bettinger, Eric and B. T. Long. (2007) "Institutional Responses to Reduce Inequalities in College Outcomes: Remedial and Developmental Courses in Higher Education." In Stacy Dickert-Conlin and Ross Rubenstein, Eds. *Economic Inequality and Higher Education: Access, Persistence, and Success*. New York: Russell Sage Foundation. [equal authorship]

Long, B. T. and Erin K. Riley. (2007) "Sending Signals to Students: The Role of Early Placement Testing in Improving Academic Preparation." In *Minding the Gap: Why Integrating High School with College Makes Sense and How to Do It*. Cambridge: Harvard Education Press and Jobs for the Future. [lead author]

Long, B. T. and Erin K. Riley. (2007) "The Demand Side of Loans: The Changing Face of Borrowers." In Frederick Hess, Ed. *Footing the Tuition Bill: The New Student Loan Sector*. Washington, D.C.: American Enterprise Institute. [lead author]

Long, B. T. (2007) *Using Research to Improve Student Success: What more could be done?* Washington, D.C.: National Postsecondary Education Cooperative (NPEC), National Symposium on Postsecondary Student Success.

Bettinger, Eric and B. T. Long. (2006) "The Increasing Use of Adjunct Instructors at Public Institutions: Are we Hurting Students?" In Ronald Ehrenberg, Ed. *What's Happening to Public*

Higher Education. Westport, CT: Greenwood Press for the American Council on Education. [equal authorship]

Long, B. T. (2004) "The Impact of Federal Tax Credits for Higher Education Expenses." In Caroline M. Hoxby, Ed. *College Choices: The Economics of Which College, When College, and How to Pay For It*. Chicago: University of Chicago Press and the National Bureau of Economic Research.

Long, B. T. (2003) "Diversity by Any Other Name: Are there Viable Alternatives to Affirmative Action in Higher Education?" *The Western Journal of Black Studies*, vol. 27, no.1, pp. 20-30.

Long, B. T. (2002) "Do State Financial Aid Programs Cause Colleges to Raise Prices?" *Who Should We Help?* Donald Heller and Patricia Marin, eds. Cambridge: Harvard Civil Rights Project.

POLICY AND OTHER RESEARCH REPORTS

Long, B. T. (2017) *Helping Women to Succeed in Higher Education: Supporting the Non-Traditional College Student with Child Care*. Washington, D.C.: The Brookings Institution and the Hamilton Project.

Long, B. T. and Monnica Chan. (2017) *Massachusetts State Student Aid Program Study*. Prepared for the Massachusetts Board of Higher Education.

Long, B. T. (2016) *State Support for Higher Education: How Changing the Distribution of Funds Could Improve College Completion Rates*. National Commission on Financing 21st Century Higher Education. University of Virginia, Miller Center.

Long, B. T. and Laura Kavazanjian. (2012) *Affirmative Action in Tertiary Education: A Meta-Analysis of Global Policies and Practices*. Report prepared for The World Bank.

Long, B. T. (2010) *Grading Higher Education: Giving Consumers the Information They Need*. Washington, D.C.: The Center for American Progress and The Hamilton Project, December.

Calcagno, Juan Carlos and B. T. Long. (2009) "Evaluating the Impact of Remedial Education in Florida Community Colleges: A Quasi-Experimental Regression Discontinuity Design." National Center for Postsecondary Research (NCPR) Policy Brief, August.

Long, B. T. and Anjali Adukia. (2009) *The Impact of the Financial Crisis on Tertiary Education World Wide*. Report prepared for The World Bank.

Baum, Sandy, Michael McPherson, Thomas Bailey, Steven Brooks, Charles Clotfelter, Susan Dynarski, Ronald Ehrenberg, Carl Kaestle, Tom Kane, Bridget Terry Long, Marshall Smith, William Troutt, and Jane Wellman. (2008) *Fulfilling the Commitment: Recommendations for Reforming Federal Student Aid*. Report from the Rethinking Student Aid Study Group. Spencer Foundation, Lumina Foundation, and the College Board.

Boatman, Angela and B. T. Long. (2008) *Does Financial Aid Impact Collegiate Success? The Effects of the Gates Millennium Scholars Program on Academic Performance and Behaviors*. Report for the Bill & Melinda Gates Foundation and The Institute of Higher Education Policy.

Bert, Melissa, B. T. Long, and Angela Boatman. (2008) *Does Financial Aid affect the Likelihood of Minority Students Entering a STEM Discipline? The Effects of the Gates Millennium Scholars Program*. Report for the Bill & Melinda Gates Foundation and The Institute of Higher Education Policy.

Long, B. T., Clantha McCurdy, and Jamie Merisotis. (2006) *Final Report from the Task Force on Student Financial Aid*. Massachusetts Board of Higher Education. [lead author]

Long, B. T. with Dana Ansel and Greg Leiserson. (2006) *Paying for College: The Rising Cost of Higher Education*. Boston, MA: MassINC. [lead author]

Long, B. T. (2006) *Estimates of the Returns from Increased Educational Attainment*. Dallas, TX: Best Associates.

Long, B. T. (2005) *State Financial Aid: Policies to Enhance Articulation and Transfer*. Boulder, CO: Western Interstate Commission on Higher Education, Changing Direction Project.

Reville, S. Paul, Celine Coggins, Jennifer Candon, Kathryn McDermott, Andrew Churchill, and B. T. Long. (2005) *Reaching Capacity: A Blueprint for the State Role in Improving Low Performing Schools and Districts*. Boston, MA: Rennie Center for Education Research & Policy at MassINC.

Choitz, Victoria, Laura Dowd, and B. T. Long. (2004) *Getting Serious About Lifelong Learning: Improving the Use and Value of the Hope and Lifetime Learning Tax Credits for Working Adults Students*. Arlington, MA: FutureWorks. [equal authorship]

UNPUBLISHED RESEARCH PAPERS

Daugherty, Lindsay and B. T. Long. (2013) "Does more information and a brief refresher course make a difference in placement into remediation? Evaluating a Developmental Education Intervention." Unpublished paper.

Owen, Laura, Eric P. Bettinger, B. T. Long, and Philip Oreopoulos. (2012). "How Late is Too Late? The Influence of Summer Outreach on FAFSA Completion and College Enrollment for the Uncommitted High School Graduate." Unpublished paper.

Long, B. T. and Juan Carlos Calcagno. (2011) "Does Remediation Help All Students? The Heterogeneous Effects of Postsecondary Developmental Courses." Unpublished paper.

Long, B. T. (2010) "The Role of States and Institutions in the Provision of Postsecondary Remediation: Policy Choices and Debates." Unpublished paper.

Calcagno, Juan Carlos and B. T. Long. (2008) "The Impact of Postsecondary Remediation Using a Regression Discontinuity Approach: Addressing Endogenous Sorting and Noncompliance." National Center for Postsecondary Research (NCPR) Working Paper and National Bureau of Economic Research (NBER) Working Paper No. 14194.

Long, B. T. (2008) "What Is Known About the Impact of Financial Aid? Implications for Policy." National Center for Postsecondary Research (NCPR) Working Paper.

Long, B. T. (2007) "Do Loans Increase College Access and Choice? Examining the Introduction of Universal Student Loans." Federal Reserve Bank of Boston, New England Public Policy Center, Working Paper No. 07-1, November.

Hoxby, Caroline M. and B. T. Long. (1999) "Explaining Rising Income and Wage Inequality among the College-Educated." National Bureau of Economic Research (NBER) Working Paper No. 6873.

ONGOING RESEARCH AND WORKING PAPERS

Soliz, Adela and B. T. Long. "The Causal Effect of Federal Work Study on Student Outcomes in the Ohio Public University System." *Under Submission*.

Long, B. T. and Eric Bettinger. "Simplification and Incentives: A Randomized Experiment to Increase College Savings." Project known as the Early College Planning Initiative (ECPI).

Taking Stock of the Research: Understanding the Power and Limitations of Nudges in Higher Education (with Eric Bettinger)

Postsecondary Remediation and State Policy: Does it matter if Developmental Courses are limited to Two-Year Institutions? (with Brandon Enriquez)

Inequality in College Resources: Trends in State Support for Higher Education

How Needy are You? The Financial Incentives Created by the Student Financial Aid System.

The Reversal of the College Gender Gap: The Role of Alternatives and College Supply.

GOVERNMENT WRITTEN TESTIMONY AND BRIEFINGS

Federal Congressional Testimony

Prepared Testimony, U.S. Senate, Committee on Health, Education, Labor and Pensions. Full Committee Hearing: *Ensuring Access to Higher Education: Simplifying Federal Student Aid for Today's College Student.* (2013)

Prepared Testimony, U.S. House of Representatives, Committee on Education and the Workforce. Hearing: *Education Research: Exploring Opportunities to Strengthen the Institute of Education Sciences.* (2013)

"College Tuition Pricing and Federal Financial Aid: Is there a Connection?" U.S. Senate, Committee on Finance. Hearing: *Report Card on Tax Exemptions and Incentives for Higher Education: Pass, Fail, or Need Improvement?* (2006)

Other Federal Testimony

Prepared Comments, White House Convening on Community College Research. Co-sponsored by the Domestic Policy Council, Council of Economic Advisers, and the U.S. Department of Education (2016)

"The State of Community College Research." White House Education Scholars Convening on Community College Research. (2016)

Prepared Comments, Middle Class Prosperity Project Forum. Hearing sponsored by Sen. Elizabeth Warren and Rep. Elijah Cummings. University of Massachusetts-Boston (2015)

Congressional Research Briefing. "Using Information and Assistance to Improve College Outcomes." Sponsored by the Institute for Policy Research, Northwestern University (2014)

Prepared Comments, White House Summit on College Opportunity. Co-sponsored by the National Economic Council, Domestic Policy Council, and U.S. Department of Education. Remarks given by Pres. Obama. (2014)

Prepared Comments, Capitol Hill Briefing sponsored by Education Deans Alliance, American Educational Research Association, and the National Academy of Education: "Payoffs of Long-Term Investments in Education Research" (2011)

State Testimony

"Financial Aid Policy: Best Practices from Around the Nation." Massachusetts Special Commission on Education Scholarships (2012)

“Does the current financial aid system promote access to higher education? Analysis of the Massachusetts Financial Aid and Enrollment Databases.” Massachusetts Board of Higher Education (2006)

“The Challenges of Access to Higher Education: The Case of Massachusetts.” Massachusetts Board of Higher Education, Task Force on Financial Aid (2004)

“State Merit-Based Aid Programs.” West Virginia State Legislature, Education Committee (2001)

Other Government Briefings and Memos

Policy Briefing with U.S. Senator Elizabeth Warren. (2014)

Policy Briefing for the Office Staff of the First Lady. “Financial Aid, Information, and Assistance.” (2014)

Policy Briefing with U.S. Secretary of Education Arne Duncan, Harvard University (2014)

Policy Memo to Chairman Tom Harkin and Senator Lamar Alexander, U.S. Senate, Committee on Health, Education, Labor and Pensions. “Consensus Recommendations for your Consideration.” With Kristin D. Conklin, Kimberly Cook, and Judith Scott-Clayton. (2013)

Prepared Comments, Briefing on the Federal College Rating System Proposal for Secretary of Education Arne Duncan, U.S. Department of Education (2013)

Panel Member, Government Accountability Office Review of Simplifying the Federal Student Aid Application Process (2009)

“The Support of Public Higher Education in Massachusetts: How do we Compare?” Prepared for Commissioner Richard Freeland, Massachusetts Department of Higher Education (2009)

“Reforming Federal Financial Aid.” Education Briefing for Senator Edward Kennedy. (2006)

ISSUE BRIEFS

Baum, Sandy, Thomas Bailey, Eric Bettinger, Susan Dynarski, Arthur Hauptman, Harry Holzer, James Jacobs, Kathleen Little, Bridget Terry Long, Michael McPherson, James Rosenbaum, Donald Saleh, Judith Scott-Clayton, Sarah Turner. (2013) *Rethinking Pell Grants*. College Board Advocacy & Policy Center, report of the Rethinking Pell Grants Study Group.

Long, B. T. and Zack Mabel. (2012) “Barriers to College Success: Income Disparities in Progress to Completion.”

Baum, Sandra, Susan Dynarski, Art Hauptman, B. T. Long, Michael McPherson, Judith Scott-Clayton, and Sarah Turner. (2011) *Suggestions for Pell Grant Reform*. Washington, DC. College Board.

Long, B. T. (2010) “The Supply Side of Higher Education: Higher Education Finance and the Potential of Using Institutional Incentives to Support Student Success.” Prepared for the project on Reform and Innovation in the New Ecology of U.S. Higher Education, Stanford University. Principal Investigators: Mitchell Stevens and Michael Kirst.

Long, B. T. (2010) “Financial Aid: A Key to Community College Student Success.” Issue Brief prepared for the White House Summit on Community Colleges, October 5th.

Bettinger, Eric and B. T. Long. (2009) *Strategies for the Redesign of the Beginning Postsecondary Students Longitudinal Study*. Submitted to the National Center for Education Statistics (NCES).

Long, B. T. (2009) *Emerging Issues in Postsecondary Access and Choice: Implications for the*

Conceptualization and Modeling of College Decisions. Washington, D.C.: National Center for Education Statistics (NCES)/National Institute of Statistical Sciences (NISS) Access and Choice Project.

Long, B. T. (2007) *College Remedial and Developmental Courses: Serving the Needs of Under-Prepared Students.* Information Brief for Program Officers. Seattle: Bill & Melinda Gates Foundation, November.

Long, B. T. (2006) *Postsecondary Remediation: Major Questions and Research.* Report for the Bill and Melinda Gates Foundation.

Long, B. T. (2004) "The Role of Perceptions and Information in College Access: An Exploratory Review of the Literature and Possible Data Sources." Boston: The Education Resources Institute (TERI).

Longanecker, David, Cheryl D. Blanco, and B. T. Long. (2004) "The Impact of Federal Financial Aid Policies on the Funding, Design, Operation, and Marketing of State and Institutional Financial Aid Policies and Practices: A Review of the Literature." Boston: The Education Resources Institute (TERI).

DICTIONARY ENTRIES AND BOOK REVIEWS

Long, B. T. (forthcoming) "College Access." *New Palgrave Dictionary of Economics.* Ed., Bruce Weinberg.

Long, B. T. (2017) "Access to Higher Education: Barriers to Enrollment and Choice." *Encyclopedia of International Higher Education Systems and Institutions.* Jung Cheol Shin and Pedro Teixeira, Eds. Section: "Mass and Elite Higher Education in 21st Century."

Long, B. T. (2017) "Access to Higher Education: Affirmative Action." *Encyclopedia of International Higher Education Systems and Institutions.* Jung Cheol Shin and Pedro Teixeira, Eds. Section: "Mass and Elite Higher Education in 21st Century."

Long, B. T. (2012) "Financial Aid and Access to Higher Education." *Encyclopedia of Diversity in Education.* James A. Banks, Ed. Los Angeles: Sage Publications.

Long, B. T. (2002) Book Review: *American Education & Corporations: The Free Market Goes To School.* By D. Boyles. *Teachers College Record*, vol. 104, no. 5.

EDITORIALS

Long, B. T. (2014) "Is College Worth It? Yes, But Not Always." *Examining the Value of a College Degree.* Seattle: Payscale.

Long, B. T. (2009) "Breaking the Affordability Barrier: How much of the college access problem is attributable to lack of information about financial aid?" *National CrossTalk.* San Jose, CA: The National Center for Public Policy and Higher Education, December.

Long, B. T. and Dana Ansel (2007) "As Student Debt Increases, Colleges Owe more in Performance." *Connection: The Journal of the New England Board of Higher Education*, Winter, vol. XXI: pp. 23-24. [lead author]

Long, B. T. (2006) "What can Governments do to Improve Access and Success in Higher Education?" *National CrossTalk: Reactions to the Spellings Commission Report.* San Jose, CA:

The National Center for Public Policy and Higher Education.

Long, B. T. (2005) "The Remediation Debate: Are We Serving the Needs of Under-Prepared College Students?" *National CrossTalk*. San Jose, CA: The National Center for Public Policy and Higher Education.

Long, B. T. (2003) "Who Can Afford College? The Economics behind Access." *Ed. Magazine*. Cambridge: Harvard Graduate School of Education.

GRANTS AND FUNDED PROJECTS

PI, Institute of Education Sciences (IES), U.S. Department of Education (Grant# R305A160388): "Could Connecting Students with Financial Aid lead to Better College Outcomes? A Proposal to Test the Effectiveness of FAFSA Interventions Using the NPSAS Sample." (2016-2021) Joint with Eric Bettinger. \$2,350,482.

Co-PI, Institute of Education Sciences (IES), U.S. Department of Education: "Digital Messaging To Improve College Enrollment and Success." (2014-2018) Joint with Chris Avery, Ben Castleman, and Lindsay Page. \$3,499,999.

Co-PI, Institute of Education Sciences (IES), U.S. Department of Education (Grant# R305A120280): "Improving Information and Access to Financial Aid." (2012-17) Joint with Eric Bettinger. \$2,869,281.

PI, Institute of Education Sciences (IES), U.S. Department of Education (Grant# R305A090204): "Simplification and Incentives: A Randomized Experiment to Increase College Savings." (2009-16) Joint with Eric Bettinger. \$1,757,738.

Co-PI, Bill and Melinda Gates Foundation, Grant: "Improving Information and Access to Financial Aid: Expanding the FAFSA Experiment." (2009-13) Joint with Eric Bettinger and Philip Oreopoulos. \$1,400,088.

PI, The Bill and Melinda Gates Foundation, Grant: "Understanding Barriers and Examining Interventions: A Project to Study Postsecondary Access and Success Using State Administrative Data." (2008-15) Joint with Eric Bettinger, Stella Flores, and Michal Kurlaender. \$1,961,931.

Co-PI, TG Public Benefit Grant Program. "A Quantitative and Qualitative Examination of the Impact of Family Engagement on Students' Academic Outcomes." (2012-2015) Joint with Families United in Educational Leadership (FUEL). \$135,000.

PI, Susan Thompson Buffett Foundation. Process evaluation of the Thompson Scholars Learning Community Program at the University of Nebraska campuses. Planning Grant (2012) \$50,000. Full Grant (2012-14) \$795,000.

Project Member, Center for Analysis of Postsecondary Education and Employment (CAPSEE). Funded by the Institute of Education Sciences (IES), U.S. Department of Education (Grant# R305C110011). Housed at the Community College Research Center, Teachers College, Columbia University with participation by scholars at the University of Michigan, Stanford University, the City University of New York (CUNY), and the University of North Carolina. (2011-2016). \$9,951,362.

Project Member, National Center of Postsecondary Research (NCPR). Funded by the Institute of Education Sciences (IES), U.S. Department of Education (Grant# R305A060010). Housed at

the Community College Research Center, Teachers College, Columbia University with participation by MDRC and the University of Virginia. (2006-2012). \$9,813,619.

Co-PI, "Increasing College Enrollment among Low- and Moderate-Income Families: A Program to Improve Access to College Information and Financial Aid." Joint with Eric Bettinger and Philip Oreopoulos. *Multiple funders*:

- The Bill and Melinda Gates Foundation (2008-10) \$1,245,024
- Institute of Education Sciences (IES), U.S. Department of Education (Grant# R305A060010), National Center for Postsecondary Research (2007-09) \$100,000
- National Science Foundation, Award# 0721158 (2007-12) \$455,509
- The Bill and Melinda Gates Foundation (2007) \$123,992
- Kauffman Foundation (2007-08) \$140,000
- The Spencer Foundation (2009-10) \$40,000

PI, Atlantic Philanthropies and Ford Foundation, Grant: "Building Infrastructure and Expanding Research in the Economics of Higher Education." With Thomas J. Kane (2006-08) \$998,000

PI, Smith Richardson Foundation, Domestic Public Policy Fellowship: "Under-prepared Students in Higher Education: Searching for the right Policies to address the Problem of Insufficient Preparation" (2006-07) \$60,000

Co-PI, Lumina Foundation for Education Grant: "The Role and Effect of Remediation in Higher Education." (2003-06) Joint with Eric Bettinger. \$225,000

PI, William F. Milton Fund, Harvard University, Research Grant: "The Role and Effect of Remedial Education in Higher Education." (2003-04) \$35,000

PI, Spencer Foundation Grant: "Community College Attendance as a Pathway to a Baccalaureate Degree." (2002-03) \$35,000

PI, Spencer Foundation Grant: "An Analysis of the Development and Impact of Honors Colleges at American Universities." (2001-02) \$35,000

PI, National Association of Student Financial Aid Administrators (NASFAA) Grant: "The Institutional Impact of the Georgia HOPE Program." (2001-02) \$5,000

FELLOWSHIPS

Fellow, Lumina Foundation for Education (2013-2015)

National Academy of Education and Spencer Foundation Postdoctoral Fellowship. "The Role of Price in College Decisions: Implications for Aid Policy." (2002-04)

American Educational Research Association (AERA) Dissertation Grant Award. "The Market for Higher Education: Economic Analyses of College Choice, Returns, and State Aid Policy." (1999-2000)

Harvard Department of Economics Graduate Studies Fellowship (1995-2000)

Sumner Slichter Fellowship for Study in Labor Economics, Harvard University (1996-97)

National Science Foundation, Graduate Studies Fellowship (1995-98)

AWARDS AND HONORS

Selected to give an American Education Research Association (AERA) Centennial Lecture.

"Supporting College Student Access and Success: Making Sure Hard Work Pays Off." Dorothy Chandler Pavilion, Los Angeles, CA. (2017) Video available [here](#).

Selected to give the Calderwood Lecture in Economics, Wellesley College. "The Economics of Higher Education Access and Success." Wellesley, MA (2017)

"Learners to Leaders" Award for Distinguished Alumni, Naperville North High School (2013)

Selected to give the Henry and Bryna David Lecture, National Academy of Sciences, Division of Behavioral and Social Sciences and Education. Awarded to a leading expert and researcher based on innovative research in the behavioral and social sciences. "The Affordability Problem: How Colleges and Government can work together." (2009)

Robert P. Huff Golden Quill Award. Given by the National Association of Student Financial Aid Administrators (NASFAA) for excellence in research and published works on student financial assistance (2008)

Featured by *The Chronicle of Higher Education* as one of eleven scholars in "New Voices: A Look at the New Generation of Higher-Education Thinkers" (2005)

Selected as a "Rising Star" in the Academy by *Black Issues in Higher Education* (2003)

Morningstar Award for Excellence in Teaching, Harvard Graduate School of Education (2003)

KEYNOTES ADDRESSES & MAJOR PRESENTATIONS (*selected*)

Panelist, NBC Education Nation, Special Live Town Hall broadcast nationally (hosted by Rehema Ellis). "To & Through: Beyond High School." John F. Kennedy Library and Museum, Boston, MA. (2017) Video available [here](#).

Keynote Speaker, Centre for Vocational Education Research (CVER) Annual Conference. London School of Economics. "Addressing Challenges to Educational Opportunity: Lessons from the U.S." London, England. (2017)

Presentation and discussion with Governor Bill Haslam. "Promising Practices to Address: Challenges to Student Success." Tennessee Higher Education Summit. Nashville, TN. (2017)

Featured Speaker, Summer Council of Presidents, American Association of State Colleges and Universities. "Addressing the Challenges Facing Today's Student: Promising Practices to Support College Access and Success." Boston, MA. (2017)

Featured Speaker, 2017 Educator Summit: Character in 3D. "Supporting Student Success: Small things that make a BIG difference." Philadelphia, PA. (2017)

Keynote Speaker, American Savings Foundation and the National Scholarship Providers Association. "Nudging Students Toward Success." Hartford, CT. (2016)

Seminar Presenter, National Bureau of Economic Research (NBER)-China Center for Economic Research at Peking University (CCER) Conference on China and the World Economy in Beijing, China. "Making College Accessible to Disadvantaged Students: Lessons from the American Higher Education System." (2014)

Keynote Speaker, New England Board of Higher Education, "Redesigning Student Aid in New England" (2014)

Panelist, SxSW edu Conference, "Empowered to Act: Postsecondary Innovation Zones" (2014)

Invited Speaker, AERA Presidential Session, Annual Meetings (2014) "Innovations in Access to and Success in College."

Moderator and Co-Planner, "Evaluating President Obama's 2020 College Graduation Goal." Participants: Martha Kanter, Under Secretary, U.S. Department of Education; Rolando Montoya, Provost, Miami Dade College; Hilary Pennington, Former Director of Education, Postsecondary Success, and Special Initiatives, Bill & Melinda Gates Foundation. Askwith Forum, Harvard Graduate School of Education (2012)

Featured Speaker, IDEAS Boston. "Nudging Students into College: Could a small change make a big difference?" (2011)

Distinguished Lecture, Monan Symposium, Boston College. *Cost, Access, and Equity in Higher Education: American and International Perspectives*. Co-Sponsored by the Fulbright New Century Scholars Program. "Student Access and Affordability: Trends in Higher Education Policy." (2007)

Panelist, Harvard University Inauguration of President Drew Faust, Faculty Symposium: "Inequality and Justice in the Twenty-First Century." (2007)

Guest Commentator, National Public Radio. "Continuing Education No Simple Matter for Some." *News and Notes*, September 18, 2006.

Seminar Presenter, "The Hopes and Realities of Higher Education in the United States." Berlin Dialogues, sponsored by the Center for European Studies at Harvard University and Wissenschaftszentrum Berlin. Session: "Social Determinism vs. Equal Opportunity: Access to Higher Education in Germany and the United States." Berlin, Germany (2004)

OTHER SPEAKING EVENTS (*selected*)

Presenter, Behavioral Science & Policy Association Annual Conference, "Addressing Challenges to Educational Opportunity with Behavioral Science." (2017)

Presenter, Boulder Summer Conference on Consumer Financial Decision Making, "Simplification, Assistance, and Incentives: A Randomized Experiment to Increase College Savings." (2017)

Presenter, Association for Public Policy Analysis and Management (APPAM), International Conference. "Educational Inequalities" Plenary. London School of Economics. (2016)

Panelist, Education Writers Association National Seminar, Boston University. (2016)

Panelist, Institute of Education Sciences (IES) PI Meeting, Postsecondary Program Meeting. "Behavioral Economics and College Persistence." (2015)

Invited Lecture, University of Virginia, Curry Research Lectureship Series (2013) "How much of a nudge is necessary? Using Information, Assistance, and Incentives to Increase College Savings and Enrollment"

Invited Lecture, CUNY Annual Policy Lecture, "How has the Great Recession Changed American Higher Education?" (2013)

Lecture, "The Role of Remediation and Developmental Courses in Access and Persistence." (with Angela Boatman). Advisory Committee on Student Financial Assistance, Seminar Series on College Access, Persistence, and Success. (2012)

Nudging Students to College Success: Could a small change make a big difference on persistence?" Achieving the Dream (ATD) State Policy Meeting (2012)

Presenter, H.ED. Talks, "Nudging Students to College Success: Could a small change make a big difference on persistence?" Achieving the Dream (ATD) State Policy Meeting (2012)

Panel Member, "Setting the Stage Nationally: Opportunities for Systems Change." The Boston Foundation, Funder Convening: *College Access & Success: What Will It Take?* (2012)

Moderator and Presenter, "Evidence—Action—Innovation: A College Completion Symposium," U.S. Department of Education. (2012)

Presenter, Federal Reserve Bank of Atlanta, Center for Human Capital Studies. "Addressing the Needs of the Underprepared: The Role of Postsecondary Remediation." Employment and Education Conference, September 29-30. (2011)

Participant, Consumer Information in Higher Education, meeting sponsored by the Bill & Melinda Gates Foundation and Margaret Spellings & Company (2011)

Guest Speaker, Lumina Foundation for Education Board Meeting. Cambridge, MA. (2010)

Speaker, National Conference of State Legislators (NCSL) Spring Forum. "Increasing Postsecondary Enrollment among Low-Income Families: Results from the FAFSA Experiment." (2009)

Featured Speaker, College Access Symposium, Tufts University. "College Access and Success: Key Barriers and Potential Solutions." (2009)

Public Lecture, University of Wisconsin-Madison, Wisconsin Center for the Advancement of Postsecondary Education (WISCAPE), Forum on the Consequences of Merit-Based Student Aid. Madison, WI (2006)

Featured Speaker, Massachusetts Association of Student Financial Aid Administrators (MASFAA): "College Access in the New Millennium: How is Massachusetts doing?" (2006)

Featured Presenter and Panel Member, MassINC Distinguished Panel: "Paying for College: The Rising Cost of Higher Education" (2006)

Forum on Extending Opportunity in Higher Education, New York University, Steinhardt Institute for Higher Education Policy. Respondent to William Bowen. New York, NY (2005)

Panelist and Moderator, "Access to Higher Education: Barriers and Strategies for Improvement" Harvard Kennedy School of Government, Black Policy Conference. Cambridge, MA (2005)

Respondent, Advisory Committee on Student Financial Aid (ACSFA), Access and Persistence Symposium. Washington, DC (2005)

ADVISORY POSITIONS (*selected*)

Member, Mindset Scholars Network, Center for Advanced Study in the Behavioral Sciences at Stanford University (2016 to present)

TWG Member, Upward Bound Evaluation, U.S. Department of Education (2014-present)

Advisory Board Member, FUEL (Families United in Educational Leadership) (2010-present)

Data Advisory Group, American Academy of Arts & Sciences, Commission on Undergraduate Education (2015-16)

Facilitator, Financial Aid Summit, Buckingham Browne & Nichols (2014 -16)

Judge, Robin Hood Foundation, College Success Prize (2014)

Member, College Board Pell Grant Sustainability Study Group (2011-13)

Research Consultant, USA Funds, School and Student Services Committee. Designing an evaluation of a financial literacy curriculum and online student loan tool (2012-13)

Policy Research Panel, Advisory Committee on Student Financial Assistance. Advising on the first and second annual reports due to the U.S. Congress. (2009-12)

Expert Briefing, Bill & Melinda Gates Foundation, Co-Chair Learning Session on the Postsecondary Success strategy with Bill Gates (2011)

Advisory Committee, Completion Innovation Challenge (2011) An initiative funded by the Bill & Melinda Gates Foundation and directed by Complete College America.

Research Advisor, Bill & Melinda Gates Foundation, U.S. Program Postsecondary Success Initiative (2009, 2011)

External Advisory Committee, Massachusetts Race to the Top (2010-13)

Education Advisory Group, I Have a Dream Foundation (2008-2013)

Research Advisory Board Member, Education Sector (2006-2010)

Technical Advisory Committee, College Results Online, The Education Trust. Advised on the development of a web tool that enables students and colleges compare the graduation rates of peer institutions (2004-10)

Advisory Committee Member, Center for Policy Analysis, American Council on Education (2007-09)

Advisor to the Chancellor of the Ohio Board of Regents (2007-08)

Lumina Foundation for Education, Research Advisory Committee (2006-08)

Advisory Committee, The Working Poor and College Access & Affordability Project, Institute of Higher Education Policy (2006-07)

Research Advisor, Massachusetts Board of Higher Education, Task Force on Student Financial Aid (2005-06)

Research Consultant, Best Associates, Project on the Return to Education (2005-06)

Advisory Board, Study of New Scholars – Principal Investigators: Drs. Richard Chait and Cathy Trower (2003-05)

Research Consultant, National Association of Independent Schools, Financing Affordable Schools Think Tank (2005)

Higher Education Advisory Board, Harvard Civil Rights Project (2003-07)

OTHER PROFESSIONAL SERVICE (*selected*)

Selection Committee and Faculty Mentor, David L. Clark Graduate Student Research Seminar in Educational Leadership and Policy, American Educational Research Association (2013-14)

Selection Committee, National Academy of Education/Spencer Foundation Dissertation Fellowship (2012)

Mentor, NAE/Spencer Fall Fellow Retreat (2012)

Contributor, White House Convening on Consumer Information in Higher Education (2011)

Chair, Institute of Education Sciences, Education Systems and Broad Reform Scientific Review Panel (2009), Member (2007-09)

Fall Conference Program Review Committee, Association for Public Policy Analysis and Management (APPAM) (2009 and 2010)

Member, Technical Review Panel, 2008 National Postsecondary Student Aid Survey (2006-12)

Task Force Member, "Rethinking Financial Aid." The College Board. (2006-12)

American Enterprise Institute (AEI) Higher Education Reform Forum Working Group (2009-12)

Senior Scholar, Spencer Dissertation Fellows Fall Workshop (2006)

Contributor, "Advancing the Understanding of the Relationship between Education and Labor Market Outcomes." National Opinion Research Center (NORC), University of Chicago (2006)

External Review Committee, Spencer Dissertation Fellowship Program (2004-07)

Social Science Research Council (SSRC), Transitions to College Project, Project Member (2003-06)

External Reviewer, CERGE-EI / Global Development Network Global Research Competition (2004-09)

Contributor, National Center for Higher Education Management Systems, Invitational meeting on state- and system-level educational databases. Boulder, CO (2005)

Roundtable Participant, Institute of Education Sciences. Discussion of Postsecondary Research Priorities (2005)

Session Chair and Discussant, "Skills, Policy, and Labor Market Outcomes across Demographic Groups." American Economic Association and the National Economic Association, Annual Meetings (2005)

Roundtable Participant, American Academy of Arts and Sciences, Initiative for Humanities and Culture. Cambridge, MA (2003)

Faculty Advisor, Social Science Research Council, Applied Economics Program (2001-03)

Roundtable Participant, American Academy of Arts and Sciences, Initiative on Diversity. Cambridge, MA (2001)

Referee: *Quarterly Journal of Economics*, *Review of Economics and Statistics*, *Journal of Labor Economics*, *Journal of Econometrics*, *Journal of Public Economics*, *Journal of Human Resources*, *Economic Journal*, *B.E. Journals in Economic Analysis and Policy*, *Journal of Policy Analysis and Management*, *Journal of Student Financial Aid*, *Economics of Education Review*, *Educational Evaluation and Policy Analysis*, *Review of Higher Education*, *Social Science Quarterly*, *Education Finance and Policy*, *Review of Educational Research*, National Science Foundation, National Center of Education Statistics, Institute of Education Sciences, The Smith Richardson Foundation, The Spencer Foundation, Harvard University Press, Princeton University Press, Stanford University Press.

UNIVERSITY LEADERSHIP AND SERVICE (selected)

Administrative Appointments

Academic Dean, Harvard Graduate School of Education (2013-17). Oversaw Academic Affairs, including master's and doctoral programs, faculty reviews and searches, faculty governance, student disciplinary cases, and developed faculty and student resources.

Faculty Director, Ed.D., Harvard Graduate School of Education (2010-13).
Chair of the Ed.D. Steering Committee and the Ed.D. Admissions Committee
Chair, Ph.D. Steering Committee, Joint committee with the Harvard Graduate School of Arts and Sciences (2012-13)

Committee Leadership, Harvard Graduate School of Education

Chair, Committee on Professional Education, (2015-17)
Chair, Master's Programs Steering Committee (2014-15), Master's Program Directors Committee

(2013-14)

Chair, Online Strategy Workgroup (2013-14), Online Education Committee (2014-15)

Chair, Faculty Space Committee (2013-14)

Chair, Master's Program Strategic Workgroup (2008-09)

Chair, Enrollment Services Committee (2002-04)

University Committee Service, Harvard University

Member, Harvard University Presidential Search, Faculty Advisory Committee (2017-present)

Member, HarvardX Research Committee (2012-present)

Member, Task Force on Sexual Assault Prevention (2014-16); member, Sub-Committee on Survey Design

Admissions Committee Member, Harvard Crimson Academy (2014-15)

Member, Committee to Establish Metrics for the Cost of Higher Education (2014-15)

Member, Provost Academic Leadership Forum (2013-2014)

Review Committee, Bureau of Study Counsel (2011)

Admissions Committee, Crimson Summer Academy, Harvard University (2005-06)

TEACHING EXPERIENCE

Teaching in Academic Programs

Harvard Graduate School of Education (2000 to present) – graduate-level courses:

- *The Economics of Higher Education: Access, Outcomes, and Competition* (module: spring 2015, spring 2016, fall 2016)
- *The Economics of Colleges and Universities: Price, Costs, and Value* (2003-2013)
- *The Role of Policy in College Access and Success* (2003-2010)
- *Microeconomics: A Policy Tool for Educators* (2001, 2005, 2008)
- *Student Achievement: The Role of Resources and Governance* (2001, 2002)

Teaching Fellow, Harvard University, Department of Economics. *The Economics of Education* (1997-98); *Thesis Tutorial in Labor Economics* (1998-99 and 1999-2000); *Thesis Tutorial in Urban Economics* (1996-97 and 1997-98)

Teaching in Harvard Professional Education Programs

Harvard Institute for Educational Management (IEM) (2001 to present)

- “Managing Resource Challenges in the Face of Competition and Accountability”
- “Enrollment Management, Financial Aid, and Competition in Higher Education”
- “Student Access and Affordability: Trends in Higher Education Policy”
- “The Financial Aid Game”

Harvard Institute for Management and Leadership in Education (MLE). “The Triple Bind: Keeping Revenues, Expenditures, and Students in Balance.” (2009 to present)

Post-Secondary Success: In Schools, Communities, and Families (HGSE Professional Education Program). “Improving Student Success: Challenges and Promising Interventions.” (2017)

Harvard Education Grantmakers Institute, “Higher Education Performance and the Push for Accountability” (2016), and “Using Research and Evaluation to Advance Public Policy: The

Case of the FAFSA Experiment." (2009)

Harvard Institute for Higher Education, Program on Performance Assessment in Higher Education. "Economic Perspectives on Outcomes Assessment: Fostering Informed Accountability." (2011, 2012, 2014)

Harvard Institute for Higher Education, Shaanxi (China) Leadership Program. "Management and Innovation of Higher Education." (2010)

Harvard Administrative Fellows Program (2004-06)

Harvard Seminar for Chinese University Presidents. "Models of Financing Higher Education in the U.S." (2005)

Harvard Institute for Independent Schools. "Tuition, Financial Aid, and Enrollment Management: What can Independent Schools Learn from Higher Education?" (2005)

LASPAU: Academic and Professional Programs for the Americas, Program in Financial Leadership for Higher Education. "Higher Education Funding and Policy: What can We Learn from the American System?" (2002)

Other Professional Education for Policymakers and Practitioners

"What the Changing Demographics Mean for Supporting Students at Selective Colleges & Universities." COFHE Financial Aid Officer Retreat (2017).

Postsecondary National Policy Institute (PNPI), Federal Student Aid Bootcamp. "What do we know about the Impact of Federal Student Aid?" Washington, DC. (2016)

"The Changing Face of College." Education Writers Association, Higher Education Seminar (2013)

Postsecondary National Policy Institute, Student Aid Seminar. "Financial Assistance and College Access." (2012)

"Research, Design and Analysis in Education." Education Writers Association Regional Seminar, Education Research and Statistics Bootcamp. With Judy Singer. (2009)

Harvard Program for Newly Elected Members of Congress. "Public Education: What can Congress do?" (2008)

National Conference of State Legislators (NCSL) Leadership Forum, Harvard Kennedy School. "Higher Education Policy: What is the State's Role?" (2007)

DOCTORAL ADVISING (graduates)

Anjali Adukia (chair)	Ivelys Figueroa (member)	Jennifer Price (chair)
Scott Barge (member)	Stella Flores (chair)	Richard Reddick (chair)
Melissa Bert (chair)	Hester Fuller (chair)	Hanna Rodriguez-Farrar (chair)
Angela Boatman (chair)	Liliana Garces (chair)	Brendan Russell (member)
Neal Brown (member)	Greg Harris (chair)	Matthew Shaw (chair)
Ron Brown (member)	Jodut Hashmi (chair)	Adela Soliz (chair)
Juan Carlos Calcagno (member)	Darryl Hill (chair)	George Spencer (member)
Ben Castleman (chair)	Michael Hurwitz (co-chair)	Marie-Andree Somers (co-chair)
Baoyan Cheng (chair)	Joie Jager-Hyman (chair)	
	John McLaughlin (member)	

Susan Sporte (chair)

Jennifer Steele (member)

Kim Truong (member)

OTHER EMPLOYMENT

Research Assistant, National Bureau of Economic Research - Cambridge, MA (1996-2000)

Associate Director of Undergraduate Studies, Economics Department, Harvard University - Cambridge, MA (1997-2000) Responsible for the Undergraduate Honors Thesis Program.

Economic Consultant, Harvard Institute for International Development (HIID) - Alajuela, Costa Rica (1997)

Investment Banking Analyst, Goldman, Sachs & Company - New York, NY (1994)

Founder and Community Service Director, Redding Circle Homework Center - Princeton, NJ (1992-94)

Urban Programs Division Intern, New Jersey Economic Development Authority - Trenton, NJ (1994)

Exhibit B: Materials Relied Upon

Case Materials

UNC0323722: The Mission Statement of the University of North Carolina at Chapel Hill

UNC0079430-37: Reading Document for the 2015-2016 Application Review Year, University of North Carolina at Chapel Hill Office of Undergraduate Admissions, Foundations and Practices Regarding the Evaluation of Candidates

Other Materials

Allen, Danielle. (2014). "Talent is Everywhere: Using ZIP Codes and Merit to Enhance Diversity." In R. D. Kahlenberg (Ed.), *The future of affirmative action: New paths to higher education diversity after Fisher v. University of Texas*. New York, NY: Century Foundation Press.

Andrews, Rodney J, and Omari H Swinton. (2014). "The Persistent Myths of "Acting White" and Race Neutral Alternatives to Affirmative Action in Admissions." *The Review of Black Political Economy* 41 (3):357-371.

Black, Sandra, Kalena Cortes, and Jane Lincove. (2015). "Apply Yourself: Racial and Ethnic Differences in College Application." NBER Working Paper No. 21368.

Bound, John, Brad Hershbein, and Bridget Terry Long. (2009). "Playing the Admissions Game: Student Reactions to Increasing College Competition." *Journal of Economic Perspectives* 23 (4):119-146.

Bowen, Howard. (1980). *The cost of higher education: How much do universities and colleges spend per student and how much should they spend*. San Francisco: Jossey-Bass.

Bowen, William G, and Derek Bok. (1998). *The shape of the river: Long-term consequences of considering race in college and university admissions*: Princeton University Press.

Bowen, William G., Matthew M. Chingos, and Michael S. McPherson. (2009). *Crossing the Finish Line: Completing College at America's Public Universities*. Princeton, NJ: Princeton University Press.

Bowen, William G., Martin A. Kurzweil, and Eugene M. Tobin. (2005). *Equity and Excellence in American Higher Education*: University of Virginia Press.

Bowen, William G. and Neil L. Rudenstine. (2003). "Race-Sensitive Admissions: Back to Basics." *The Chronicle Review* Volume 49, Issue 22, Page B7.

Cancian, Maria. (1998). "Race-Based versus Class-Based Affirmative Action in College Admissions." *Journal of Policy Analysis and Management* 17 (1): 94-105.

Carnevale, Anthony P., Stephen J. Rose, and Jeff Strohl. (2014). "Achieving racial and economic diversity with race-blind admissions policy." In R. D. Kahlenberg (Ed.), *The future of affirmative action: New paths to higher education diversity after Fisher v. University of Texas*. New York, NY: Century Foundation Press.

Chan, Jimmy and Erik Eyster. (2003). "Does Banning Affirmative Action Lower College Student Quality?" *American Economic Review* 93: 858–72.

Clotfelter, Charles T. (2011). *After "Brown": The rise and retreat of school desegregation*. Princeton: Princeton University Press.

College Navigator, National Center for Education Statistics, U.S. Department of Education.

Cortes, Kalena E. (2010). "Do Bans on Affirmative Action Hurt Minority Students? Evidence from the Texas Top 10% Plan." *Economics of Education Review* 29(6): 1110-1124.

Cullen, Julie Berry, Mark C. Long, and Randall Reback. (2013). "Jockeying for position strategic high school choice under Texas' top ten percent plan." *Journal of Public Economics* 97 (1):32-48.

Ehrenberg, Ronald G. (2000). *Tuition Rising: Why Colleges cost so much*. Cambridge: Harvard University Press.

Ellison, Glenn and Parag A. Pathak. (2016). "The Efficiency of Race-Neutral Alternatives to Race-Based Affirmative Action: Evidence from Chicago's Exam Schools." Cambridge, MA: National Bureau of Economic Research Working Paper 22589.

Epple, Dennis, Richard Romano, and Holger Sieg. (2003). "The Practice and Proscription of Affirmative Action in Higher Education: An Equilibrium Analysis." Cambridge, MA: National Bureau of Economic Research (NBER) Working Paper #9799.

Espenshade, Thomas J, and Chang Y. Chung. (2005). "The opportunity cost of admission preferences at elite universities." *Social Science Quarterly* 86 (2):293-305.

Fletcher, J. M. and A. Mayer. (2014). "Tracing the effects of guaranteed admission through the college process: evidence from a policy discontinuity in the Texas 10% plan." *Contemporary economic policy* 32(1): 169-186.

Flores, Stella M. and Catherine L. Horn. (2015). *Texas Top Ten Percent Plan: How It Works, What Are Its Limits, and Recommendations to Consider*. Educational Testing Service.

Fryer, Roland G., Glenn C. Loury, and Tolga Yuret. (2008). "An Economic Analysis of Color-Blind Affirmative Action." *Journal of Law, Economics, and Organization* 24 (2):319-355.

Gaertner, Matthew. (2014). "Advancing College Access with Class-Based Affirmative Action: The Colorado Case." In R. D. Kahlenberg (Ed.), *The future of affirmative action: New*

paths to higher education diversity after Fisher v. University of Texas. New York, NY: Century Foundation Press.

Gaertner, Matthew N. and Melissa Hart. (2013). "Considering Class: College Access and Diversity." *Harvard Law & Policy Review* 7, no. 2: 367-403.

Golden, Daniel. (January 15, 2003). "Admissions Preferences Given to Alumni Children Draws Fire." *Wall Street Journal*.

Gurin, Patricia, with Gerald Gurin, Eric L. Dey, and Sylvia Hurtado. (2004). "The Educational Value of Diversity." In *Defending Diversity: Affirmative Action at the University of Michigan*, by Patricia Gurin, Jeffrey S. Lehman, and Earl Lewis, with Eric L. Dey, Gerald Gurin, and Sylvia Hurtado. University of Michigan Press.

Harris, Angel L, and Marta Tienda. (2012). "Hispanics in higher education and the Texas top 10% law." *Race and social problems* 4 (1): 57-67.

Holmes, Steven A. (April 5, 1998). "Re-Rethinking Affirmative Action," *New York Times*.

Holzer, Harry and David Neumark. (1999). "Assessing Affirmative Action." Cambridge, MA: National Bureau of Economic Research (NBER) Working Paper No. 7323

Horn, Catherine L. and Stella M. Flores. (2003). *Percent Plans in College Admissions: A Comparative Analysis of Three States' Experiences*. Cambridge, MA: The Civil Rights Project at Harvard University.

Hoxby, Caroline, and Christopher Avery. (2013). "The missing 'one-offs': The hidden supply of high-achieving, low-income students." *Brookings papers on economic activity* 2013 (1):1-65.

Hurwitz, Michael. (2011). "The Impact of Legacy Status on Undergraduate Admissions at Elite Colleges and Universities." *Economics of Education Review* 30 (3):480-492.

Kahlenberg, Richard D. (1996). "Class-based affirmative action." *California Law Review* 84 (4):1037-1099.

Kahlenberg, Richard D. (2014). *The future of affirmative action: New paths to higher education diversity after Fisher v. University of Texas.* New York, NY: Century Foundation Press.

Kahlenberg, Richard D. (2015). *Achieving Better Diversity: Reforming Affirmative Action in Higher Education*. The Century Foundation.

Kain, John and Daniel O'Brien. (2003). "Hopwood and the Top 10 Percent Law." University of Texas at Dallas, Cecil and Ida Green Center for the Study of Science and Society mimeo.

Koretz, Daniel, Michael Russell, Chingwei David Shin, Cathy Horn, and Kelly Shasby. (2002). "Testing and diversity in postsecondary education: The case of California." *Education Policy Analysis Archives* 10(1): 1-39.

Lavergne, G., and Walker, B. (2003). *Implementation and results of the Texas automatic admissions law (HB 588) at UT-Austin: Demographic analysis, fall 2002*. Austin, Texas: Admissions Research, The University of Texas at Austin.

Long, Bridget Terry. (2016). *State Support for Higher Education: How Changing the Distribution of Funds Could Improve College Completion Rates*. National Commission on Financing 21st Century Higher Education. University of Virginia, Miller Center.

Long, Mark C. (2004). "College applications and the effect of affirmative action." *Journal of Econometrics* 121(1): 319-342.

Long, Mark C., Victor Saenz, and Marta Tienda. (2010). "Policy Transparency and College Enrollment: Did the Texas Top Ten Percent Law Broaden Access to the Public Flagships?" *The ANNALS of the American Academy of Political and Social Science* 627 (1):82-105.

Long, Mark and Marta Tienda. (2008). "Winners and losers: Changes in Texas University admissions post-Hopwood." *Educational Evaluation and Policy Analysis* 30: 255–280.

Niu, Sunny Xinchun and Marta Tienda. (2010). "The Impact of the Texas Top 10 Percent Law on College Enrollment: A Regression Discontinuity Approach." *Journal of policy analysis and management* 29(1): 84-110.

Potter, Halley. (2014). "Transitioning to Race-Neutral Admissions: An Overview of Experiences in States Where Affirmative Action has been Banned." In R. D. Kahlenberg (Ed.), *The future of affirmative action: New paths to higher education diversity after Fisher v. University of Texas*. New York, NY: Century Foundation Press..

Pressley, Sue Anne. (August 28, 1997). "Texas Campus Attracts Fewer Minorities," *Washington Post*, p. A-1.

Radford, Alexandria Walton and Jessica Howell. (2014). "Addressing Undermatch Creating Opportunity and Social Mobility." In R. D. Kahlenberg (Ed.), *The future of affirmative action: New paths to higher education diversity after Fisher v. University of Texas*. New York, NY: Century Foundation Press.

Reardon, Sean F, Rachel Baker, Matt Kasman, Daniel Klasik, and Joseph B Townsend. (2015). *Can Socioeconomic Status Substitute for Race in Affirmative Action College Admissions Policies? Evidence from a Simulation Model*. Princeton, NJ: Educational Testing Service.

Thompson, J. Phillip and Sarah Tobias. (2000). "The Texas Ten Percent Plan." *American Behavioral Scientist* 43(7): 1121-1138.

Tienda, M., Leicht, K., Sullivan, T., Maltese, M., and Lloyd, K. (2003). *Closing the gap?: Admissions and enrollments at the Texas public flagships before and after affirmative action*. Princeton, NJ: Texas Top 10 % Project.

United States Census Bureau, Current Population Survey, 2016 Annual Social and Economic Supplement.

U.S. Department of Education. (2016). *Digest of Education Statistics*.

University of North Carolina-Chapel Hill, Class Profile website. Accessed at:
<http://admissions.unc.edu/apply/class-profile-2/>.

University of North Carolina-Chapel Hill, Mission Statement. Accessed at:
<http://www.unc.edu/about/mission>.

University of Texas-Austin. Brief for Respondents at 12-15, Fisher v. Univ. of Tex., No. 11-345 (U.S. Aug. 6, 2012).

Winston, Gordon. (1998). "Economic research now shows that Higher Education is not just another Business." *Chronicle of Higher Education*, March 27, 1998, page B6.

Watkins, Matthew. (April 5, 2017). "Texas senators mull eliminating Top 10 Percent Rule." *The Texas Tribune*. Available here: <https://www.texastribune.org/2017/04/05/texas-senators-mull-eliminating-top-10-percent-rule/>